JULY, 1961
50c per copy

THE Lumberman

LUMBER PLYWOOD BOARD WOOD MANUFACTURING

Annual BOARD REVIEW 1961 Edition

ONE MAN-ONE MACHINE / 50,000 BD. FT. PER DAY

Log Handling with Cat 944

1. "Live-action" hydraulics enable the 944 to pick up a full grapple fast.

2. Good balance, visibility and safe design give 944 operators the confidence to travel fast.

3. Long reach lets operators dump into hot water pond without getting front wheels up to edge.

A 944 wheel loader and a competent operator take care of the log handling at the Napoleon Gagnon and Sons Mill near Quebec. The 105 HP 944 carries hardwood and pulpwood logs from the yard stockpiles to the hot water pond, a round trip of 1500 feet. It averages 5.75 loads an hour, up to 25 16-foot logs a load, totals up 5000 bd. ft. per hour—50,000 bd. ft. per 10 hour day.

It's a low-cost, dependable, easy system. COST SAVINGS are realized every payday with only one man handling the operation. DEPENDABILITY goes on day after day as the 944 does the job without down time, without long service periods. And EASY is the best way to describe the whole operation—the 944's wide-open design lets the operator get in and out easily, gives him excellent visibility, safety and confidence (this basic design also provides extremely long reach and high lift; notice the 944 puts logs in the pond without getting the front wheels on the edge of the bank).

Big loads are picked up fast by the *live-action* hydraulic system that operates independently of the load on the drive wheels (the pump is geared to the torque converter *input* rather than output or a transmission shaft). The power shift transmission makes maneuvering around stockpiles fast and effortless—a forward-reverse lever on the steering column needs only a gentle push to shift direction and the loader responds quickly and smoothly.

There are many attachments that equip Cat wheel loaders for the side chores around the mill—winches, special buckets and forks, dozers, snow plows.

Your Caterpillar Dealer is eager to give you more information about Cat wheel loaders, either the 944, the smaller 80 HP 922, or the big 140 HP* 966. Ask him to demonstrate one on your job. Then switch to lower costs, to dependability in log handling—get a Cat wheel loader.

Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

* All flywheel horsepower

CATERPILLAR

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PASS THIS MONEY-SAVING TIP ON TO YOUR MILLWRIGHT

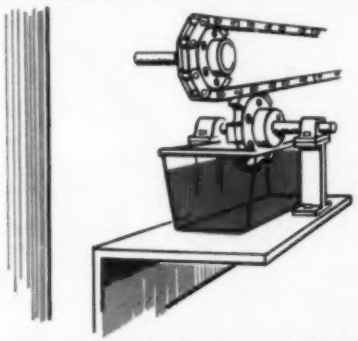
How to reduce chain breakdowns in veneer dryers

Generally, when a veneer dryer goes out of operation, it's because of a broken chain; and most times the chain breaks because of inadequate lubrication.

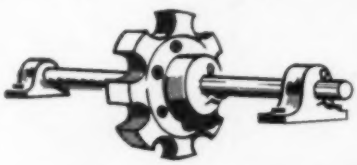
These chains are hard to keep lubricated with normal procedure because the dryer heat melts the lubricant, or dries it up very quickly.

Here's a very elementary setup that relubricates the chain every time it goes around, and does it with only a minimum of attention.

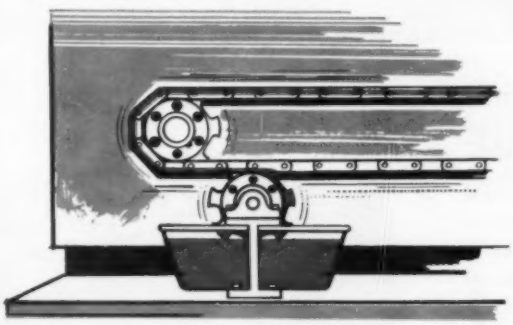
All you need is: a baking tin, the deep kind that's used for baking bread; a gear wheel small enough to fit partly into the baking tin, with teeth the same size as the links in the conveyor chain; a shaft and a pair of pillow blocks to fit the gear; and brushes that are as wide as the chain.



1. Rig a shelf on the dryer at the right height so that a gear suspended on a shaft across the top of the pan will engage the underside of the conveyor chain. The gear and shaft should be mounted on elevated supports so the pan can be removed for cleaning.

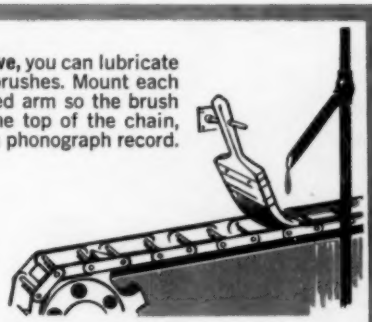


2. Drill the shaft adjacent to the pillow blocks and the gear wheel so you can slide in cotter pins. These will keep the gear and shaft in place under the chain.

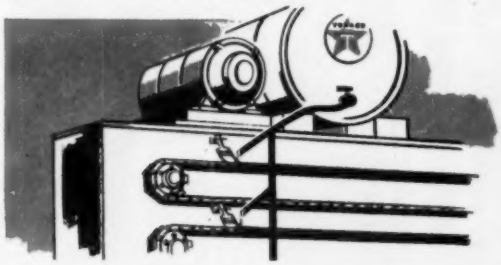


3. Fill the pan with Texaco 1623 Oil HD so the bottom half of the gear wheel is immersed in the oil. As the conveyor runs, it will rotate the gear wheel in the oil bath and pick up a continuous supply of oil.

4. As an alternative, you can lubricate the chains with brushes. Mount each brush on a pivoted arm so the brush will trail along the top of the chain, like a needle on a phonograph record.



5. Fasten a 55-gallon drum of lube oil at a point on the conveyor that's higher than the highest brush. Run an oil line, fitted with a flow regulating valve, from the drum down to the brushes. The oil will feed by gravity into the brushes and then onto the chain.



With either of the above items in place, the conveyor chain will get continuous lubrication. To make the whole thing almost completely automatic, rig a second oil line, with a valve, down from the drum to the gear-and-pan arrangement. That way there will be oil in the pan as long as there's oil in the drum.

If you have any other problems in lumber mill lubrication, your best source for fast solutions is your local Texaco representative. Texaco Inc., 135 East 42nd Street, New York 17, N. Y.

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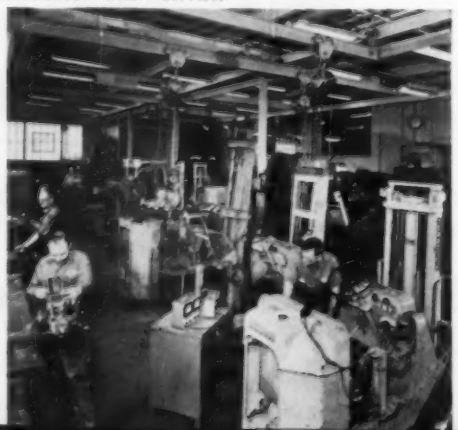

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THE Lumberman

LUMBER PLYWOOD BOARD WOOD MANUFACTURING

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HOW WESTERN GEAR SERVES THE LUMBER INDUSTRY

NEW $2,000,000 PICKERING PLYWOOD MILL USES WESTERN GEAR DRIVES THROUGHOUT

Manufacturers of quality lumber since 1894, the Pickering Lumber Corporation of Standard, California, has used Western Gear drives with outstanding success throughout their 3 acre, 5 million-square-foot per month plywood plant. Based on their unequalled performance and production record, Western Gear StraitLine* gearmotors and SpeedMaster* reducers were again specified for the newly completed Gold Ply plywood mill — most modern of its kind. Designed by Industrial Engineers and Co. of Tacoma, under supervision of plant superintendent Bill Holmberg, the new mill is geared to produce the finest plywood products at the lowest operating costs—achieving full utilization of the logs in the company's large timber stands. Where maximum continuous-flow production efficiency is called for, with rugged, trouble-free reliability and minimum down-time — it pays to specify Western Gear drives, reducers and gearmotors. For complete information on Western Gear drives in the lumber industry, write, wire or phone: **Western Gear Corporation,** Industrial Products Division · P.O. Box 126 · Belmont, California · LYtel 3-7611.

*Registered Trademarks

on the long run... **QUALITY COSTS YOU LESS**

WG INDUSTRIAL PRODUCTS DIVISION

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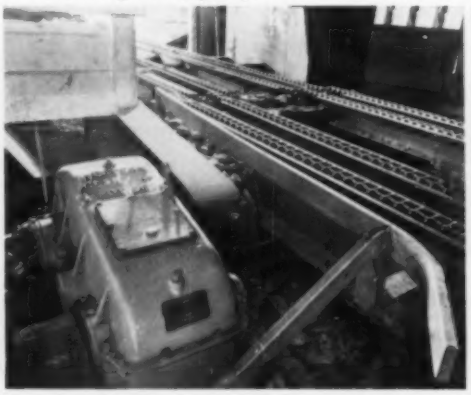
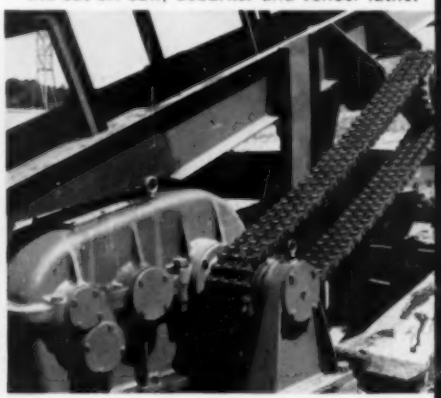
Logs are brought into the unique Gold Ply mill on the company's own flat cars and crane-loaded onto the live deck powered by two SpeedMaster reducers.

Geared for the heaviest duty in the mill, these SpeedMaster reducers are equipped with an outboard bearing insuring sufficient overhung load capacity.



Similar herringbone SpeedMaster reducers are used in conveyors carrying logs through the cut off saw, debarker and veneer lathe.



Veneer lathe powered through parallel shaft SpeedMaster reducer.

Shovel base type StraitLine gearmotor is especially suited to plywood operation. It isolates motor from reducer—limits parts needed for spares back-up.

SpeedMaster parallel shaft reducer shown driving conveyor from barker building to burner.

Another 1ST from Wood Treating:

NEW *Super* NOXTANE!

...first anti-sap stain and mold formula containing a full 40% sodium pentachlorophenate plus 60% borax!

- *Super* NOXTANE is now more effective than ever for controlling blue-black stains and fungi in freshly sawed lumber!
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"The difference between profit and loss can depend upon the right kind of maintenance. That's why we're 100% Union Oil.

"Since using Union's products exclusively we haven't had a minute's downtime caused by lubrication failure. *This includes 8 years of tough duty on one gang mill which often runs 16 hours a day.*

"But I'm not surprised at such results. The lubrication record is equally good in our whole operation—logging trucks, road-building equipment, all through the mill.

"The service we get from Union Oil is just as impressive. One of your sales engineers made us the most comprehensive lubrication survey I've ever seen.

"I don't think you could improve this combination of great products and outstanding know-how."

We're always working to improve our products and services. This is how we've kept our reputation as The Finest for more than 70 years. Whatever your fuel and lubrication requirements, why not take advantage of this know-how? Just call your nearby Union Oil representative today.

Log going through barker, SDS Lumber Company

UNION OIL COMPANY OF CALIFORNIA

UNION OIL CENTER, LOS ANGELES 17, CALIFORNIA

Spotlight - - -

Plywood plant for St. Regis Paper Co.,
at J. Neils Lumber Co. Div., Libby, Mont., is now scheduled for construction start next spring. To have a 60 million sq. ft. capacity (3/8" basis), utilizing larch and fir in Western Montana. Will employ about 200.

Third laminating plant to be built
by Unit Structures, Inc., Peshtigo, Wisc. Their recent purchase of Carry Lumber Co., near Durham and Raleigh, N. C., provides them with sawmill, kilns and planing facilities. New glulam plant to be built near the mill, gives Unit their third.

Getting deeper into plywood is
Pope & Talbot, Inc., San Francisco, with their recent purchase of physical assets of Columbia Veneer Co., plywood plant at Kalama, Wash. The 70 million sq. ft. plant will be managed from company's Portland, Ore. office. Arthur Bergman remains superintendent.

Revolutionary changes in building materials,
components and public concepts of housing will come about in next 15-20 years. So say building research experts Dr. Clyde Williams, pres. of Clyde Williams & Co., Columbus, Ohio. and Dr. C. M. Doede, pres. of Quantum, Inc., Wallingford, Ohio research laboratory. Rapid progress in "cross-fertilization" or "wedding" of technologies is changing construction ideas. Organic chemistry may well be the basis with cross-linking of molecules. "Much too dangerous to depend upon innovation alone in your own present line of products," they said, "to sustain your business indefinitely."

The National Forest Products complex,
combining six sawmills in Interior British Columbia, have been purchased by Waite Amulet Mines, subsidiary of Noranda Mines, Canada's largest. Will operate as Northwood Mills, Ltd.

Crown Zellerbach Corp.'s new ply plant
addition to their green veneer mill at St. Helen's, Ore., is being engineered by Prentice Engineering & Contractors, Inc., Portland, Ore. . . . construction to start July 1. Capacity will be 84 million sq. ft. annually (3/8" basis). W. E. Koch, Jr., will direct the operation.

Green light given particleboard plant
for Big Bear Timber Co., Redlands, Calif., to complete their utilization complex. Columbia Engineering Co., Eugene, Ore. will design and build the $1.7 million unit to use 100 tons day of sawmill and logging residues. Will make three basic boards: fine surfaced; combined flake-particle; high density and water resistant.

$300,000 for wood strength studies
for lumber and plywood industries is being turned over to U.S. Forest Service to facilitate strength studies of Western woods. Contributors to facilitate program, are West Coast Lumbermen's Association; Douglas Fir Plywood Assoc.; and Western Pine Assoc. With cooperation of U.S. Forest Products Laboratory, study to be completed Fall of 1963.

U. S. Plywood Corp., buys Canadian operations
of Western Plywood, Ltd., including timberlands. Plants include two in Vancouver, B. C., one in Quesnel, B. C. and one in Edmonton, Alberta. Purchase price was $6.5 million.

Overnight coast-to-coast air freight
shipments at rates rivaling truck charges; cargo trucks rocketing 150 miles per hour on separate highways; overnight rail freight service from West Coast to Chicago; Super ocean underwater liners traveling at 40 knots to avoid storms: These things were predicted at traffic specialists meeting in Portland, Ore., observing National Transportation Week.

Two firms with an American Conscience place freedom before dollars

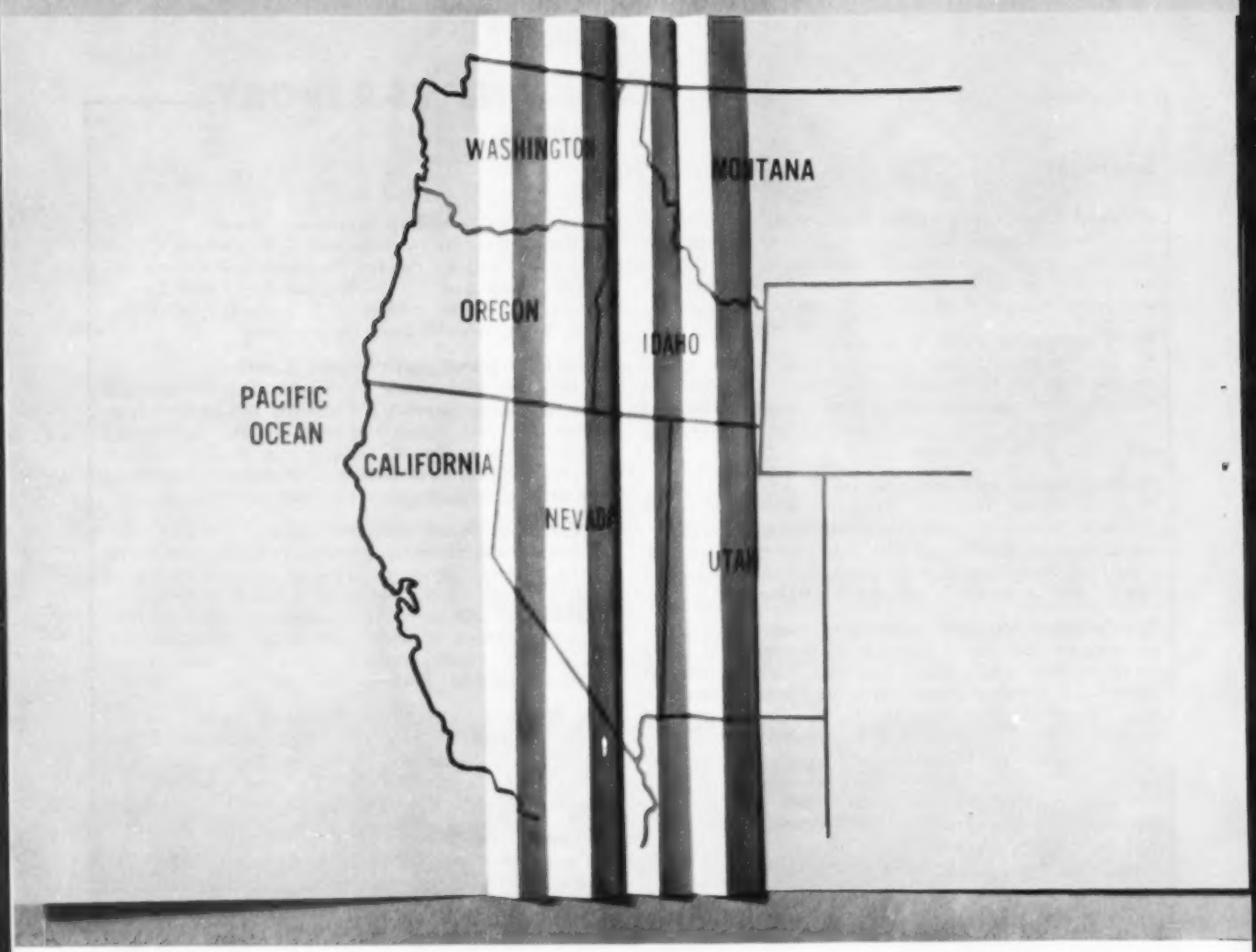
Hats off to two Seattle, Wash. firms. Puget Sound Fabricators, Inc., who make automatic lumber sorters and to Republic Electric & Development Co., spoke out for freedom and the American way of life. They recently declined very substantial orders to supply the automatic sorting systems and REDCO controls to a Canadian firm building a sawmill for U.S.S.R. to be the largest in the world.

Says Puget Sound Fabricators: We recognize that this action on our part will probably not be of too great effect on this whole project. Nonetheless, Russia is exploiting the technical skills and knowledge of industry of North America. "In the openly declared economic warfare which they have challenged us to, we believe that our cooperation would be little less than giving aid and comfort to an enemy, who hopes to dominate our way of life, but somewhere, and this seems to be the point, we must be willing to be counted as thinking of our own country's welfare before the dollar."

Said Republic Electric & Development Co.: Though this order represents almost 10% of our annual volume: "The Russian government has vowed innumerable times to achieve the ultimate destruction and elimination of Democracy. Either by all-out, or economic warfare, the results are the same. The one advantage we in North America have over the Communist block is our production know-how . . . to knowingly give away even the tiniest portion of that production superiority on our part would represent to us the admission of the inevitability of world domination by communism, to this we will never be a part.

"On his recent visit to Moscow, your representative was told by the Russian purchasing committee that they could not train enough technical people in the next 20 years to achieve the building of this tremendous lumber mill and were therefore purchasing North American technical know-how to close this gap from 20 years to 2 years. REDCO will have no part in this."

We hope that the freedom loving American lumber industry will take note.



It's getting shorter now

The miles are the same but road hours shorter. So report cost-conscious truckers who have powered with the new Caterpillar 1673 Truck Diesel. Their records show consistently reduced haul time. And less time means more profit per haul.

The compact, high-output 1673 has the horsepower and lugging ability to pull through soft road conditions or adverse grades without excessive down shifting. This means better average speeds—more favorable fuel consumption.

Unlike naturally aspirated engines which lose power at altitude, the Turbocharged-Aftercooled 1673 develops 220 HP all the way up to 7500 feet above sea level...takes the high country in stride.

If you'd like to trim *your* trip time, insist on Cat power when purchasing new trucks or check with your Caterpillar Dealer when repowering. It's the same heavy-duty power loggers have had in their Caterpillar Crawler Tractors, Traxcavator-Loaders and other logging machinery.

LOGGER CUTS HAUL TIME 25%. C. R. Anderson hauls logs from timber to mill in the rough country near Eugene, Oregon. He reports a 25% reduction in haul time since he repowered with the new 1673 as compared to former diesel power. Anderson says he's been getting an extra mile per gallon out of the thrifty 1673, too.

CATERPILLAR

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Engine Division, Caterpillar Tractor Co., Peoria, Ill., U.S.A.

Industry - - -

SUBSTANTIAL IMPROVEMENT IS NOTED
by purchasing executive in their April reports. They advise that no longer doubt but that dynamics of business recovery have been set in motion. Upturn was first signaled by National Association of Purchasing Agents in January. Only once in last 5½ years has so large a percentage (58%) reported improvement in new orders. Production is keeping pace with new orders. The 48% reporting higher production levels is largest number since the pre-steel strike month of May 1959. Purchasing executives persist in holding a tight lock on inventories, however. Definite note of caution exists for fair second quarter and better third quarter . . . keeping an eye on world turmoil situation.

AITC NAMES HANISCH PRESIDENT
at recent annual meeting in Las Vegas, Nev. American Institute of Timber Construction elected president, M. C. Hanisch, Jr., president of Unit Structures, Inc., Peshtigo, Wisc., who succeeds Ward Mayer, president of Timber Structures, Inc., Portland, Ore., one of AITC original founders. Other officers were vice-president, William Lindberg, president of Woodlam, Inc., Tacoma, Wash., and Val Gardner, sales manager for Rosboro Lumber Co., Springfield, Ore., director and trustee.

PRELIMINARY WOOD PRESERVATION REPORT
shows 3% less wood treated commercially in 1960 than during 1959. Showed total of 207.4 million cu. ft. treated in 1960 based on figures from 319 plants handling 95% of total.

TO CLARIFY BUILDING CODES
an advisory council on building codes, composed of architects, engineers, trade association and model code organizations recently completed an organizational meeting in Washington, D. C. sponsored by the U. S. Chamber of Commerce. Group will draw up "the most clear statement on code affairs that has ever been promulgated" understandable to the general public.

MARCH BOOKINGS FOR SOFTWOOD LUMBER
showed a 52% gain over February according to NLMA's latest report available. New orders also set a new record for the month. Hardwood lumber increased 6% over February but still off 8% over March 1960. National softwood lumber production for March estimated at 2.292 billion bd. ft.

AFRICA DEVELOPMENT PRESENTS CHALLENGE
to world forestry today, Vinton Burns, regional forestry officer for Africa of FOA reports. Accelerated destruction of African forest means this valuable asset must be safeguarded. Use of industrial wood in North America is per capita, 24 times more than in Africa today.

OUTLOOK FOR WESTERN FOREST INDUSTRY
is of significance to all of North America, says John A. Guthrie and George R. Armstrong in their new Resources For the Future publication. They account for over 56% of value added by manufacturing in the nation's lumber industry; 13% in pulp and paper and 65% in plywood and veneer. (More today) than shown in last census figures. The Pacific Slope has the nation's largest stand of virgin timber, rate and manner in which it is cut will have strong impact on forest industries in other parts of the country.

CROSSETT LUMBER QUITS OAK FLOORING
manufacture and all other hardwood units except its pallet department. Move is to all pine products giving them largest pine production of any southern mill. Action taken after an economic study and best land utilization.

LOWEST ACCIDENT RATE IN BRITISH COLUMBIA'S
forest industry history was achieved last year. Average rate for all forest industries was 42.45 injuries per million man-hours worked, 7% reduction from 1959. Most outstanding showing was made by 746 small wood products firms, with 473 in logging, who work entire year without a sustaining accident. Rayonier Marpole division sawmill won National Safety Council's honor award.

BUILDING A NEW PLYWOOD PLANT
on the Miramichi River, is New Brunswick's (Canada) oldest lumber mfg. firm and exporting company, George Burchill & Sons, Ltd., South Nelson. Will be producing spruce plywood by early 1962.

MACHINERY DISPLAYS TO COVER 7 ACRES
at the giant Forest Industries Equipment Exhibition to be held at the Central Canadian Exhibition Grounds, Ottawa, Sept. 19-21. Will be largest logging and lumbering equipment show ever to be held in Eastern Canada. Forest Industries Equipment Exhibition, 341 Church St., Toronto 2, Ont., Canada are handling details.

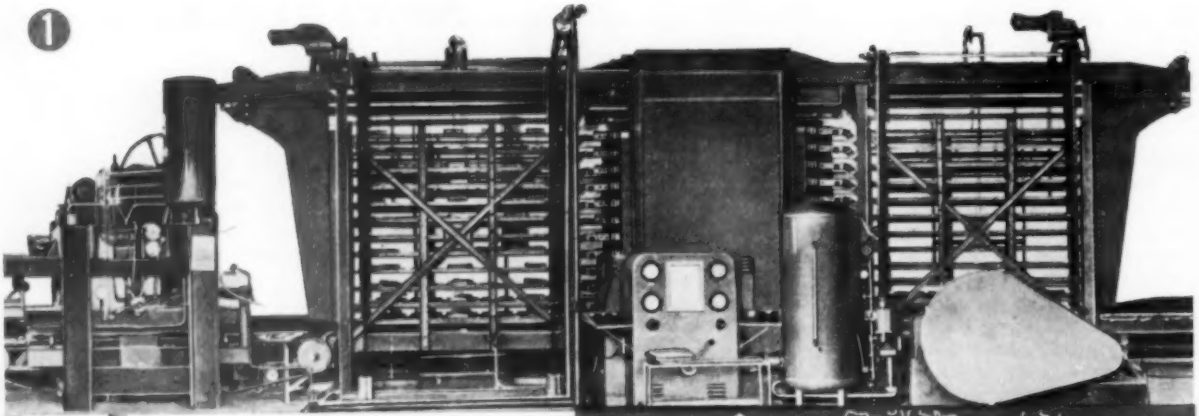
TWO TREATING PLANTS
get underway. A pressure-treated wood preserving plant of Koppers Co., Inc., will go into operation at Whittier, Alaska to handle ties, poles, piling and lumber. First one for Alaska. Plant will impregnate wood with creosote, later to ad Non-Com fire protection for wood.

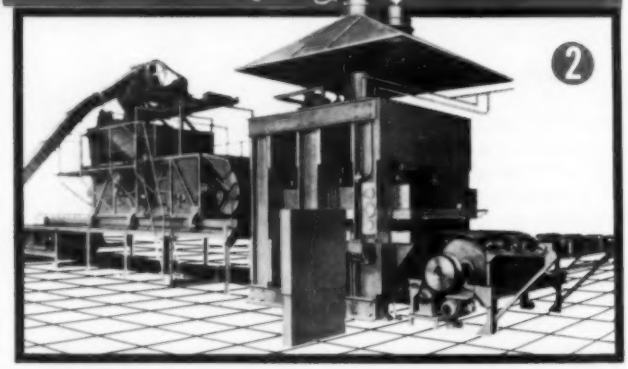
At Southwest Forest Industries, Phoenix, Ariz., operation near Prescott, Ariz., that company just completed a new $400 thousand commercial wood pressure testing and preserving plant. The Southwest installation designed and engineered by The Taco Corp., of Spartanburg, S. C., will use the latest Vapor-Drying process and a variety of treating methods including creosote, half creosote and half petroleum, and pentachlorophenol.

HOME IMPROVEMENT LOANS UP 45%
was reported by the Federal Loan Bank Board for the first three months of the year, totalling nearly $1 billion for repair of homes and refinancing of mortgages. This is an increase of nearly 45% over 1960 first quarter.

OREGON LUMBER CO. TO CLOSE
after 72 years operation, owners Edward Hines Lumber Co., have announced. Shutdown of the Baker, Oregon plant that cut 33 million bd. ft. annually was due to lack of further timber supply, high stumpage costs and tax burdens beyond its economic possibilities.

THE CANADIAN WESTERN LUMBER CO.
name of the Crown Zellerbach plant at Fraser Mills, British Columbia, has passed into history. The new more descriptive name is now Crown Zellerbach Building Materials, Ltd. The Fraser Mill was started in 1889, now a part of CZ integrated operations.





NOW MADE IN NORTH AMERICA!

The World's Finest FLAKEBOARD

BISON BOARD — long recognized as the world's finest flakeboard — is now being made from planing mill shavings, cut-offs, scraps, and round wood in these three North American plants. All are producing finest quality ¾" board, meeting strict industry specifications.

The Bison System offers semi-automatic operation in single or multiple-opening press, with low installation, maintenance and operating cost. Call, wire or write for complete details.

1. WOOD FIBREBOARD CO., Albany, Oregon
Using planing mill shavings and cutoffs, producing 4' x 16' and 5' x 16' panels in a multiple-opening press. Finished board meets strict TECO specifications. Production: 4500 sq. ft. per hour.

2. FLAKEBOARD CORPORATION, Milltown, N.B.
Using round wood, making 5' x 16' panels in single-opening press. Production: 1200 sq. ft. per hour.

3. TENN-FLAKE CORPORATION, Morristown, Tenn.
Using round wood, cutoffs and scrap, producing 5' x 20' panels, single-opening press. Production: 1500 sq. ft. per hour.

NOW MORE THAN 70 INSTALLATIONS AROUND THE WORLD!

Sole Distributor in U. S. and Canada:

SODERHAMN MACHINE MANUFACTURING COMPANY
Talladega, Alabama
West Coast: 9442 S.W. Barbur Blvd., Portland, Oregon

Personalities - - -

B. V. Hancock

BEVERLY HANCOCK . . . executive vice-pres., Cascades Plywood Corp., Portland, Ore. takes early retirement after 33 years in the business. Started with struggling Evans Products Co., in 1928, became vice-president when plant sold to Cascades Plywood Corp. Was named executive vice-pres., in 1950. He served two terms and an uncompleted term as president of Douglas Fir Plywood Assoc. and was on DFPA management committee 14 years. During war and post-war years 1942-47 he served on the government's Plywood Advisory Committee. Hancock was re-elected to the board of directors of Cascades and will serve in advisory capacity.

ANDREW J. WATT . . . Masonite Corp., has been named vice-president, marketing. At same time Paul Shoemaker and William Cotton became executive vice-presidents.

CARROLL K. O'ROURKE . . . advertising and trade promotion manager, Weyerhaeuser Co., Tacoma, Wash., is now president and board chairman of Home Improvement Council.

HENRY PEARSON . . . Prince George, B.C. sawmill operator, was elected president of the Northern Interior (B.C.) Lumbermen's Association. George Wilmont is vice-pres.

R. F. DeGRACE . . . Ottawa, Ont., becomes executive director of Canadian Wood Development Council. Has been executive vice-pres., Canadian Inst. Timber Construction.

ROBERT N. KELLY . . . has joined Northwest Door & Plywood Sales, Inc., as executive vice-president and general manager, at Tacoma, Wash.

RICHARD C. DOANE . . . president of International Paper Co., has been named board chairman. He succeeds John H. Hinman, named honorary chairman and woodlands director.

ORMIE C. LANCE . . . will retire from secretary-managership of National Woodwork Manufacturers Assoc. His successor is James E. Nolan.

DON GOTT . . . is new manager of the American Walnut Assoc. He was former sales manager for the Marshfield, Wis., mill of Weyerhaeuser Co., Roddis Div.

LEN MOYER . . . has been appointed assistant to the general manager of Vancouver Plywood Co., Vancouver, Wash.

GENE W. MAW . . . has been appointed plywood sales manager for Pope & Talbot, Inc., plywood plant at Kalama, Wash.

EMMETT E. STODDARD . . . a 42 year lumber veteran, retires as West Coast Lumbermen's Association director of field services. One of the best known figures in the lumber industry, Stoddard came with WCLA in 1958.

DR. NICHOLAS V. POLETIKA . . . vice-president, research, for Union Lumber Co., Fort Bragg, Calif., was elected as president of Technical Advisory Council to Univ. of Calif.'s Forest Products Laboratory.

W. B. Freeman

WILLIAM B. FREEMAN . . . president of Miller Freeman Publications, publisher THE LUMBERMAN, has been elected as Board Chairman of the Associated Business Publications. He will head an organization representing 169 business publications throughout the world. His appointment as chairman is solid recognition of over 30 years service in the publishing field. He has headed his firm for the past six years. The company was established in 1902 in Seattle, Wash., by Miller Freeman, Sr. Company publishes THE LUMBERMAN, THE TIMBERMAN, PULP & PAPER and journals in many other industries.

CROSSETT LUMBER CO. FILLS KEY POSITIONS . . . for their new $6 million flakeboard plant. Men named are: W. D. Morse, Jr., production manager; T. H. Walton, technical dir.; R. J. DuChaine, plant supt.; J. M. Armstrong, mechanical supervisor; Wm. S. Rule, as finishing and shipping supervisor.

L. A. LUNDQUIST . . . plywood development manager for Long-Bell Div., International Paper Co., Longview, Wash., has been named to newly created position of plywood production manager. He also serves on Commercial Standards and Product Development Committee of Douglas Fir Plywood Assn.

HAROLD S. FOLEY . . . has resigned as director of MacMillan, Bloedel & Powell River, Ltd., following his exclusion from executive committee membership. He earlier resigned as vice-chairman of the British Columbia company. He had been board chairman of Powell River Co., previous to company's merger with MacMillan & Bloedel which he himself instigated. His withdrawal over business policies was led by his brother M. J. Foley who earlier resigned as president of MB&PR. Since the merger, ten former Powell River Co. executives have resigned.

PAUL C. STEVENS . . . "Curley" as he was familiarly known as Western Manager of the National-American Wholesale Lumber Association, Inc., has been lost to the industry. He died June 11 at the age of 70, at his home in Portland, Ore. He began his career in lumber 52 years ago. His leadership and guidance to the lumber industry will long remain.

JOHN P. NELSON . . . has been appointed factory sales representative for plywood, flakeboard and millwork for Long-Bell Div., International Paper Co. Territory includes Minnesota, Iowa, Nebraska, North and South Dakota and western Wisconsin.

MARTIN C. DWYER . . . Washington, D. C., has been appointed manager of the Construction Equipment Exposition and Road Show, scheduled to open February 23, 1963, at the International Amphitheatre in Chicago. Exposition is managed by the Construction Industry Manufacturers Assoc. Dwyer assumed his new CIMA duties July 1, in Chicago.

JACK BADEWITZ . . . formerly with Pittsburgh and New York lumber and wood products firms, has been named assistant sales manager for Willamette Valley Lumber Co., Dallas, Ore.

ALLIS-CHALMERS

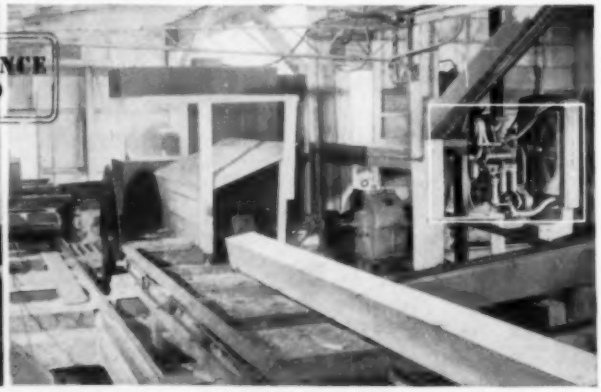
"Thousand Series" Diesels . . . PERFORMANCE PROVED

from Woods to Mill . . .

PERFORMANCE PROVED

On Yarder, an Allis-Chalmers 21000 diesel provides "excellent lugging power, and it's no trouble at all — just normal maintenance," according to owners, James Brothers, Dexter, Oregon.

In Logging Trucks — 16000 and 21000 diesels are outpulling competitive engines and doing it on substantially less fuel. "Serviceable, economical, good power," sum up Lulay Brothers, Scio, Oregon, owners of this Kenworth truck repowered by a 16000.



On Log Loader, repowering with 21000 brought several benefits: plenty of power to handle a variety of jobs easily . . . fuel savings of 20% . . . fast starts . . . and no maintenance, reports the owner, Aborigine Lumber Co., Fort Bragg, Calif.

At Saw Mill — A 21000 diesel installed by Fleming Lumber, Minturn, Colo., provides "Adequate power with amazingly rapid recovery; low fuel consumption; excellent starting, even at 0 to 10 degrees; maintenance nil."

If you want benefits like these, see your dealer about Allis-Chalmers "Thousand Series" diesels. Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

***POWER* FOR A GROWING WORLD**

A-C ALLIS-CHALMERS

EC-40

THIS 400-FEET LONG 4-ZONE

MOORE SOFTBOARD DRYER

at the new Dierks Forests, Inc., Woodfiber Division Plant, Craig, Oklahoma, brings into existence for the industry

A NEW CONCEPT IN FIBERBOARD PRODUCTION

- We welcome the opportunity to give you specific information on this dryer or other items in our diversified line of drying and handling equipment for softboard, gypsum, hardboard, lumber and veneer.

FOUR FACTORIES WILL SERVE YOU:

MOORE MODERN METHODS

MOORE DRY KILN COMPANY

JACKSONVILLE FLORIDA · BRAMPTON ONTARIO · VANCOUVER BRITISH COLUMBIA · NORTH PORTLAND OREGON

World's Largest Manufacturers of Drying and Handling Systems for Lumber and Veneer

This is a scene common in manufacturing plants throughout America . . . a Mobil Engineer advising and consulting with an equipment builder. Mobil first makes its experience available when machines are being planned, designed and built. Here a Mobil Engineer discusses a lubricant application problem with Mr. Norman Holbrook, chief Engineer of FWD Wagner, Inc., leading West Coast builder of logging and heavy equipment.

Mobil: working with FWD Wagner, Inc. . . .

This newly completed "Lumberjack" shown in the Wagner shop, is ready for delivery. It is lubricated with correct Mobil products after study by Mobil Engineers in co-operation with plant personnel. The President of FWD Wagner, Inc., Mr. Morris E. Ash, says, "We've come to depend on Mobil Engineering service, both for dependable products and for co-operative effort with our engineers whenever special needs arise. We not only use this service in determining lubrication needs for equipment we build, but apply Mobil experience to our plant maintenance program." Some of the special problems solved with the help of Mobil Engineers include . . . scoring and loss of packing in hydraulic cylinders . . . parts simplification . . . lubricant loss in "step-down" transmissions.

WORKING WITH 5000 EQUIPMENT BUILDERS THE WORLD OVER . . .

MOBIL IS BEST

A special Mobil Engineering staff maintains regular contact with all major builders of mechanical equipment in the free world. These Mobil Engineers compile detailed information on every significant piece of mechanical equipment being built or proposed for construction. The Mobil Representative who calls on you has this information at his fingertip.

The result of this continuing co-operative program which began over half a century ago: about 5000 machinery and equipment builders recommend or approve Mobil products by name . . . employ many million recommendation plates, stickers, tags and decals, recommending Mobil lubricants for new equipment every year. In addition, Mobil representatives have access to 75,000 up-to-date lubrication recommendations . . . can provide specific information on what lubricants to use and how to apply them for every

FWD Wagner Lumberjack "fishes" logs from Columbia River! This is one of FWD Wagner's famous "Lumberjacks" on the job in the cold waters of the Columbia River. This tractor can lift and carry 70,000 lbs. and will handle logs from water, train or truck . . . can be used for sorting or cold-decking at feed pond or mill. It is one of the largest, most efficient log-handling tractors operating today.

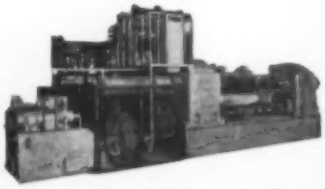
EQUIPPED TO SERVE YOU!

part of virtually every make and type of equipment, including equipment of the type you operate.

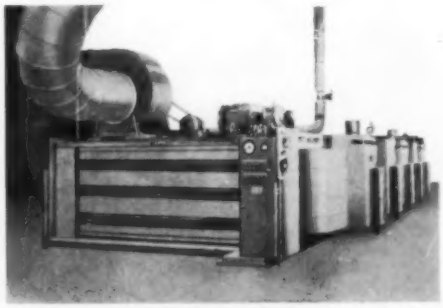
These contacts contribute to the accumulation of expert knowledge and experience that makes Mobil the world leader in lubrication. This "expertness" is your assurance of correct lubrication for your equipment. When you use Mobil products, you can be sure of manufacturer-approved recommendations, help in problem solving, advice on maintenance procedures.

Find out how Mobil's combination of experience and expertness, quality products and proved performance assures you of better operating results. For details on how Mobil can help you, call your Mobil representative. Or write, the Mobil Oil Co., 150 E. 42nd St., New York 17, N. Y.

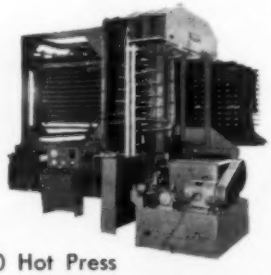
Mobil



V24 Veneer Rotary Lathe



S50 Veneer Dryer



P20 Hot Press
with Loader & Unloader

V43 Veneer Auto Clipper

Taihei Machinery

Taihei offers the best service for your projected plant with long years experience for:

Veneer & Plywood Plant
Woodworking Plant
Particle-Board Presses
Hard-Board Presses

Established 1925

Exported to: U.S.A., Philippines, Burma, Australia, Formosa, Okinawa, Thailand, Pakistan, Indonesia, Hong Kong

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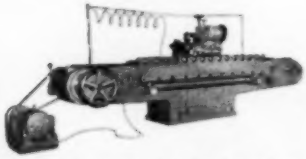
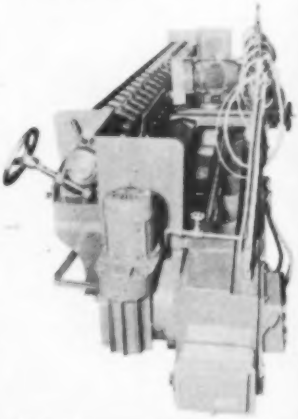
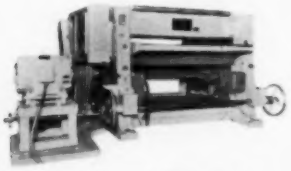
Branches: Tokyo, Osaka, Sapporo
Overseas Office: Manila



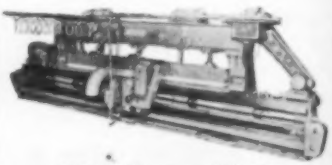
W91 Scraper Knife Grinder



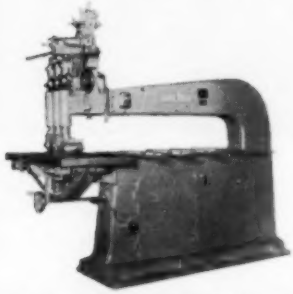
V92 Veneer Knife Grinder



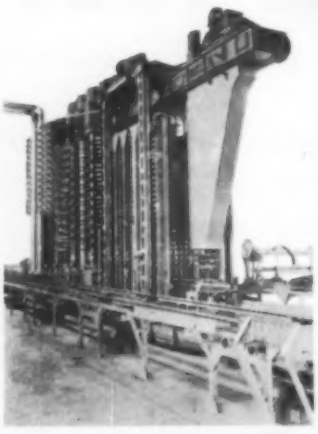
W41 Panel Scraper



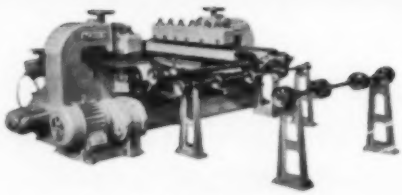
W02 Veneer Jointer



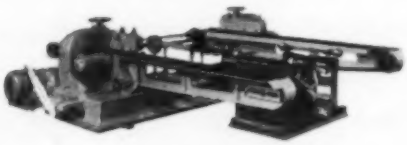
W11 Taping Machine

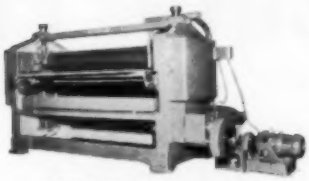


P23 Hot Press for Hard Board

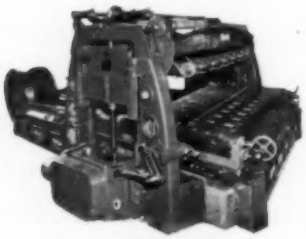


W31 Double Sizers





W22 Glue Spreader



V34 Veneer Slicer

FOREST PRODUCTS STOCKS

Furnished by the La Salle Securities Co., Investment Securities, 208 La Salle St., Chicago, Illinois. Members of Midwest Stock Exchange.

NOMINAL QUOTATIONS

STOCKS	Paid 1960	June 5, 1961 This Month Bid	Ask	Last Month Bid	Ask
Ambassador Oil, Com.	.....	5¼	C	5¼	C
American Forest Products, Com.	$ 1.00	22	24	23	25
Anderson Tully Co., Cap. Stk.	20.00	425	OW	425	OW
Atlas General Ind., Com.	.....	14¼	C	14⅛	C
Atlas General Ind., Pfd.	.....	27	29	28¾	29¾
Biles-Coleman Lbr. Co., Com.	*	19	OW	19	OW
Boise-Cascade Corp., Com.	.35	21½	23½	20¼	22
British Columbia Forest Prod., Com.	.50	12¼	C	14½	C
Brooks-Scanlon, Inc., "A"	.35	17	20	17	20
Brooks-Scanlon, Inc., "B"	.35	17	20	17	20
Calaveras Land & Timber Co., Com.	2.00	23½	OW	23½	25
Calcasieu Paper Co., Com.	.....	43	OW	40	60
Cascades Plywood Corp., com.	1.00	26	28	26½	28½
Central Coal & Coke Co., Com.	1.25	34½	OW	34	OW
Cherry River Boom & Lbr., Com.	.....	48	OW	48	OW
Chicago Mill & Lbr. Co., Com.	1.25	23½	25	24¾	25¾
Cloquet Lumber Co., Com.	*	1	OW	1	OW
Consolidated Financial Corp., Com.	30.00	65	OW	65	OW
Container Corp., Com.	1.00	28¼	C	25⅛	C
Container Corp., 4% Pfd.	4.00	93½	C	93½	94½
Crossett Company, Class "A"	.70	43	45	44	46
Crossett Company, Class "B"	.70	43	45	44	46
Crown-Zellerbach, Com.	1.80	59⅛	C	57¾	C
Crown-Zellerbach, $4.20 Pfd.	4.20	95	C	92	C
Curtis Companies, Com.	.....	6½	7½	6½	7½
Dierks Forests, Inc.	5.05&S	135	165	140	160
Evans Products, Com.	.75	13⅜	C	14¾	C
First Lumber Corp., Com.	.....	4¼	5¼	4	5
Fordyce Lumber Co., Cap. Stk.	1.00	55	OW	55	75
General Plywood, Com.	.....	19⅝	C	20¼	C
Georgia-Pacific Co., Com.	1.00&S	71¾	C	72	C
Harbor Plywood, Com.	.40	34½	C	34½	C
Edward Hines Lumber Co., Com.	2.50	36	38	37	39
Insular Lumber Co., Com.	1.50	11⅓	C	11½	OW
International Paper, Com.	3.03¾&S	33	C	32¼	C
International Paper, $4 Pfd.	4.00	94¾	C	95¼	C
Keyes Fibre Co., Com.	.64&S	16¾	17¾	18¾	19¾
Kirby Lumber Corp., Com.	2.00	50½	52½	50	52
Longview Fibre Co., Com.	3.60	81	84	81	84
Louisiana Central Oil & Gas, Com.	4.00	50	OW	50	OW
Louisiana Long Leaf Lumber Co.	5.00	135	OW	135	OW
Louisiana Sawmill Co., Com.	.....	¼	OW	½	OW
MacMillan & Bloedel, "B" Com.	.75	15¾	C	16⅞	C
McCloud River Lumber Co., Com.	4.00	108	116	104	110
McCloud River Railroad, Com.	3.00	42	OW	42	OW
Meadow River Lumber Co., Com.	*	225	OW	310	OW
Medford Corp., Com.	10.00	225	OW	220	OW
Mississippi Land Co., Cap. Stk.	1.40	11½	OW	11½	13½
Northwest Paper Co., Com.	.38&S	23	25	24	26
O. & N. Lumber Co., Cap. Stk.	2.00	40	OW	40	OW
Olin Oil & Gas, Com.	.50	18½	C	18¾	C
Ozan Lumber Co. Com.	4.00	92½	C	92½	OW
Pacific Lumber Co., Cap. Stk.	12.00	330	OW	325	OW
Pickering Lumber Co., Com.	.30	7¾	8¾	8½	9½
Pine Tree Manufacturing Co., Com.	60.00	20	OW	20	OW
Pope & Talbot, Inc., Com.	1.25	30	31½	29½	31
Pope & Talbot, Inc., Pfd.	.30	4¼	OW	4¾	OW
Potlatch Forests, Inc., Com.	1.00	44	46	45½	47½
Puget Sound Pulp & Tbr. Co., Com.	1.00	24¼	26	22⅝	C
Richmond Cedar Works, Com.	.....	¼	½	⅜	¾
Richmond Cedar Works Mfg., Com.	.....	¾	1	¾	1¼
St. Regis Paper, Com.	1.40&S	37⅞	C	35⅞	C
Southern Minerals Corp., Com.	.....	2⅞	3⅜	3⅛	3½
Southwest Forest Indust. Inc., Com.	.....	18¼	19¼	14⅜	15¾
Tremont Lumber, Com.	2.00	95	OW	95	OW
U. S. Plywood Corp., Com.	2.00	50½	C	52⅛	C
Union Lumber Co., Com.	1.20	49	54	45	50
United States Lumber, Com.	.30	4¼	4¾	4	5
Upson Company, Com.	.60	11½	12½	12	13
Weyerhaeuser Co., Com.	1.20	35	37	38¾	40
Winton Lumber Co., Com.	1.00	15	OW	15	OW
Wood Conversion Co., Com.	.35	10½	11½	10¼	11¾
Wooduse, Inc., Com. (Now Fersolin Corp., Com.)	.....	½	¾	½	⅞
BONDS					
Georgia-Pacific Corp. Subordinated Deb., 5s due 1976	.....	91	95	91	94

*—Information not available. BW—Bids Wanted. S—Stock. OW—Offerings Wanted. C—Last Sale on Exchange where listed or bid.

THE ABOVE INFORMATION, WHILE NOT GUARANTEED, IS OBTAINED FROM SOURCES WE BELIEVE TO BE RELIABLE

INDUSTRY TRENDS

DOUGLAS FIR

Production for the first four months of 1961 totalled 2.54 billion board feet. During the period, orders were 2.6 billion and shipments were 2.49 billion. Unfilled orders at the end of April stood at 52.8 million board feet and the inventory at that time was 1.12 billion board feet.

WESTERN PINE

Western Pine production for April was 689 million board feet with 751 million board feet shipped during the month. Lumber inventories were 1.914 billion feet at that time. Production was 91% of April, 1960; shipments were 98%. Production for first four months of 1961 is 1.98 billion; shipments for first four months were 2.14 billion board feet.

SOUTHERN PINE

Southern Pine production for April was 522 million feet, a decrease of 5% below March, 1961, and 10% below April, 1960. April shipments were 538 million feet, 10% below March and 5% below April, 1960. Orders were 550 million board feet, 17% below March and 5% below April, 1960. Unfilled orders at the end of April were 290 million board feet. Gross stocks were 2.1 billion board feet. Lumber production for the first four months of 1961 was 1.99 billion board feet; orders were 2.17 billion board feet; and shipments were 2.05 billion board feet.

REDWOOD

Redwood production for April was 53.84 million board feet. Shipments were 56.65 million board feet. Orders received were 61.71 million board feet. These figures include all wood species in the redwood region. For the first four months of 1961, lumber production totals 194 million board feet; orders 216 million board feet; shipments 191 million board feet.

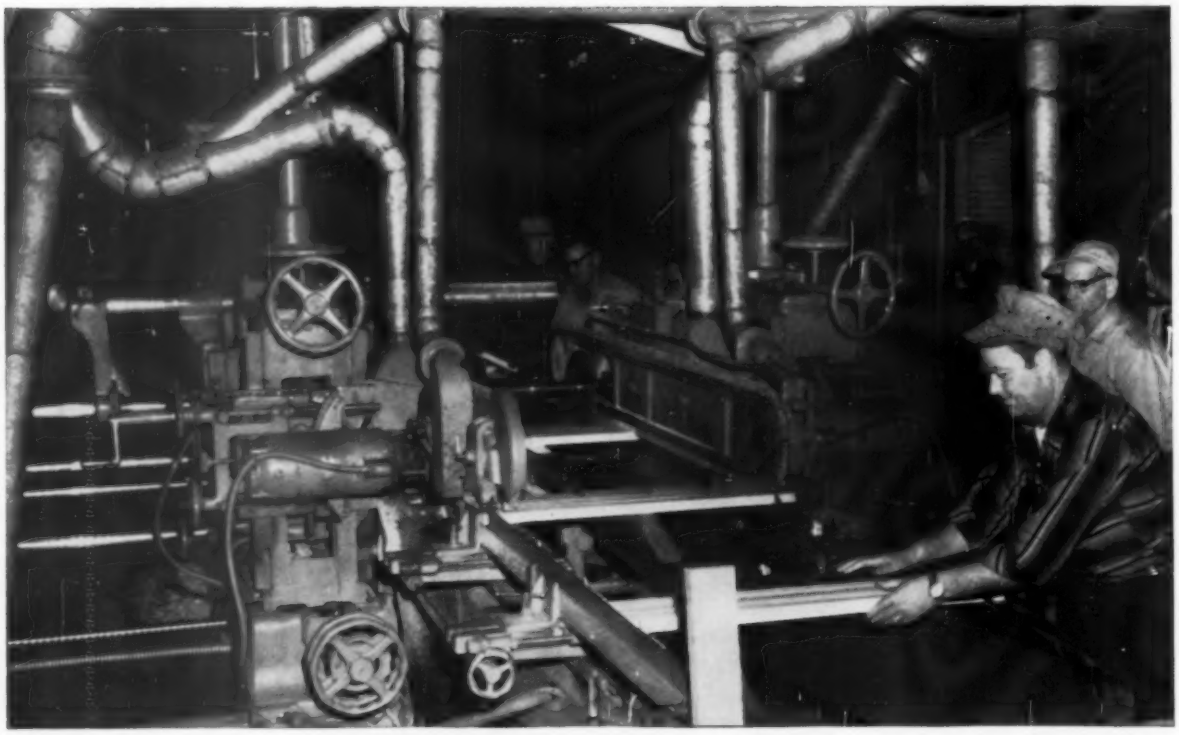
DOUGLAS FIR PLYWOOD

According to the weekly production report of the Douglas Fir Plywood Assn., average weekly plywood production for May was 170,755,000 square feet, 3/8" rough basis. This was 83% of the industry capacity of 207,641,000 square feet weekly. The figure is based on reports from plants controlling 92% industry capacity with the balance estimated. For the week of May 27, sanded production was 80,573,000 square feet and unsanded was 90,195,000 square feet.

Producers to Introduce New Products

Success of Douglas Fir Plywood producers is their constant research and development of new products and continuous promotion. Most recent development soon to be at hand will be special coatings being developed for both interior and exterior use. At their Annual Meeting at Gearhart, Ore., they had a look at a dozen new finishes ranging from epoxies and plastic to aluminum foils, fiberglass and printed. These long-lasting surfaces that will reduce maintenance, provide better housing will help take up the slack of the expected 10.5 billion board foot plant capacity expected by the end of 1961.

Also reported as what is believed to be the start of one of the outstanding promotions instigated by DFPA is the "Freedom Home" for retired people. Builders are claiming this represents a large "cash-on-the-line" business. Up-to-date, the outstanding designed homes are pressing builders to keep up with customer demands. The Freedom Home was jointly promoted by DFPA—West Coast Lumbermen's Association, Western Pine Association and California Redwood Association.



How Greenlee No. 545 Double-End Tenoners helped Dierks Forests, Inc. increase production and expand its product line . . .

Ten years ago Dierks Forests, Inc. turned down orders at their Mountain Pine, Ark. plant . . . unable to handle them with existing equipment. After the purchase of a Greenlee No. 545 Double-End Tenoner *all* orders were filled promptly, efficiently and at a lower cost. The new Greenlee also permitted Dierks to expand their line to include furniture parts and building supplies. At present this mill is producing about a million board feet per week.

Installation of three more Greenlee Double-End Tenoners in plants in Dierks, Ark., Wright City, and Broken Bow, Okla. enabled Dierks to reach out and get more business. Today the company is rated as the largest producer of lumber in the South.

Plant officials state that the accuracy of the Greenlee machines is astounding. Maintaining tolerances as close as .005″ on long runs saves them hours of valuable assembly and finishing time.

Greenlee's continuing interest in the machines after delivery and assistance in solving production problems have been greatly appreciated. You, too, will find Greenlee ready to give prompt and cooperative service whenever it is needed. Investigate! Write for bulletins 545 and W-504-A.

STACK OF DOOR FACINGS PRODUCED ON A GREENLEE DOUBLE-END TENONER

GREENLEE BROS. & CO.

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IBI INSULATING RATINGS

For Fiberboard Sheathing

By CHARLES GRAY, manager
Insulation Board Institute

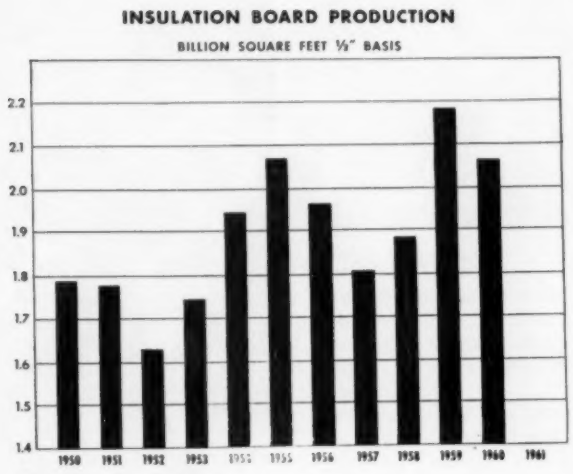
Chicago: The Insulation Board Institute has established rated insulating values for the regular fiberboard sheathing produced by its 14-member companies. Surface-to-surface heat resistance values (R-values) have been set at R 2.06 for 25/32" insulation board sheathing and at R 1.32 for ½" fiberboard sheathing. This marks the first time that sheathing material has been rated for its insulating value by a trade group.

Starting in May, the 14 IBI member companies (representing over 95% of all insulation board production) began stamping the "IBI Rated Seal" on their sheets of regular fiberboard sheathing. The seal itself contains the IBI R-value rating for the two thicknesses. Eventually, the seal will appear on over 20 million sheets of insulation board sheathing in an average year.

Purpose of the IBI rating program is to focus attention of builders, dealers, architects and others concerned with quality housing on the insulation superiority of insulation board sheathing. It will also enable builders and their heating equipment suppliers to more conveniently calculate heat resistance factors for home walls.

According to best estimates available today on homes built with sidewall sheathing, approximately 45% use insulation board sheathing, 30% use lumber sheathing, 13% use gypsum sheathing, 10% use plywood sheathing, and 2% use other sheathing materials.

The large 4x8 ft. sheets of insulation board sheathing applied vertically and properly nailed are approved under the four model buildings codes of national recognition for use without supplementary corner bracing. The FHA also establishes a test procedure in Technical Circular No. 12, and our companies will be pleased to furnish proof of their insulation board products as approved by FHA without corner bracing.



IBI 'RATED SEAL', which shows heat resistance (R) value rating for fiberboard sheathing. Both asphalt coated and asphalt impregnated will carry the seal.

Insulation Board Institute member companies cooperating in the IBI Rating program are: Abitibi Corp.; Armstrong Cork Co.; Barrett Div., Allied Chemical Corp.; The Celotex Corp.; Certain-teed Products Corp.; The Flintkote Co.; Insulite Div., M&O Paper Co.; Johns-Manville Sales Corp.; Kaiser Gypsum Co.; National Gypsum Co.; Pioneer Div., The Flintkote Co.; Simpson Timber Co.; United States Gypsum Co.; Wood Conversion Co.

Under the direction of the IBI Technical Committee and the technical Director, IBI is currently sponsoring more than 20 research projects at various laboratories. Among current topics are studies designed to improve insulating roof deck; to develop additional fire-resistance; to improve sheathing densities to permit its use for roof sheathing and to improve techniques for use of fiberboard backer under aluminum siding. Other major studies are underway on preservative treatments, sound transmission and strength.

Particleboard Standards Underway

By ROBERT E. DOUGHERTY,
Executive-Director, National Particleboard Assoc.

ROBERT DOUGHERTY

Washington: In its young history, officially since January 1960, The National Particleboard Association has succeeded in formulating and having accepted standards for mat-formed wood particleboard, as its first order of business.

Under chairmanship of R. C. Platow, research director for U. S. Plywood Corp., the technical committee revised and re-submitted a standards draft to the Department of Commerce Commodity Standards Division, which are currently being distributed. At the same time the group submitted to the Federal Housing Administration, a standard for mat-formed wood particleboard for floor tile underlayment. The FHA Technical Standards Division announced in November 1960 a "Use of Materials Bulletin" for underlayment, UM28, which incorporated the Association's standard by reference.

The Association now has committees active in the areas of statistics, imports, membership, trade promotion and public relations. There is a current program of liaison with other in-

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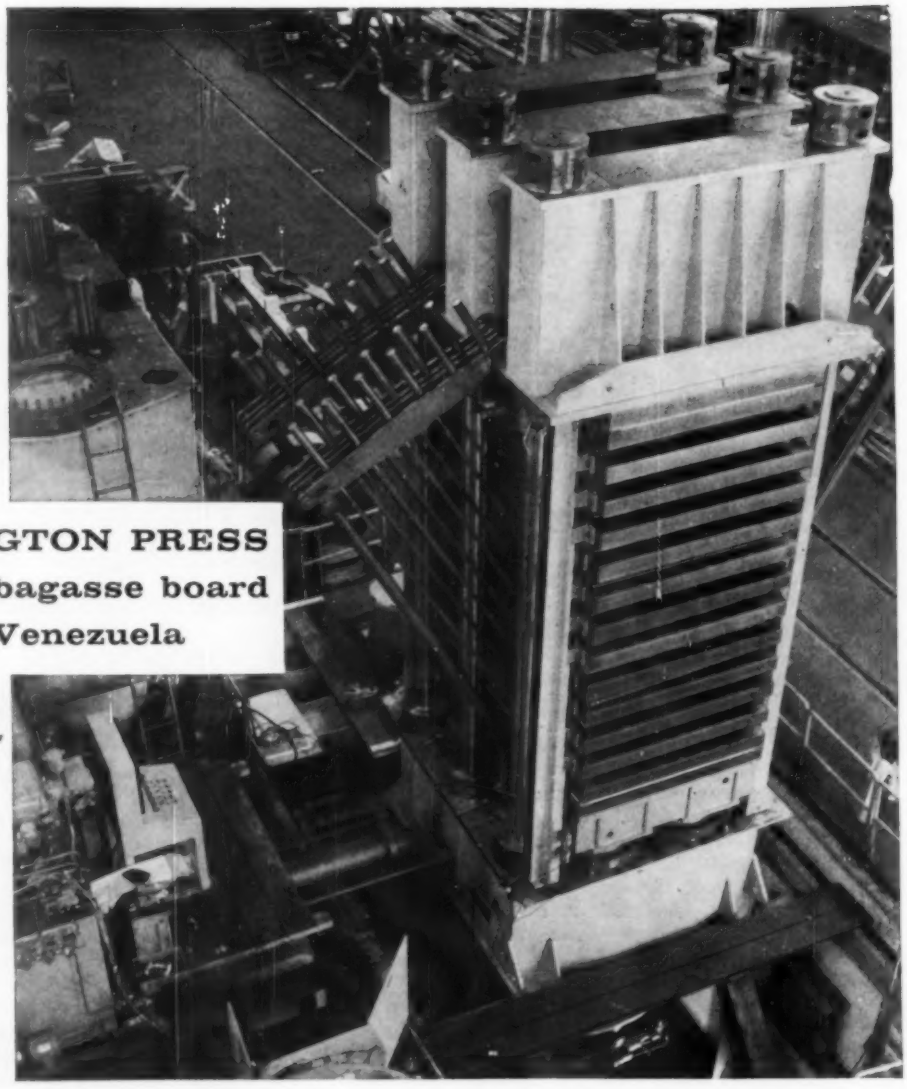

New WASHINGTON PRESS pre-tested for bagasse board production in Venezuela

Product: Bagasse softboard, composition board and hardboard.

Owner: Tablopan de Venezuela, Caracas.

Plant Engineers: Columbia Engineering Co., Eugene, Ore.

South America now joins the continents of Australia, Asia, Europe and North America in the worldwide span of Washington hydraulic press installations.

One reason for preference is indicated in the view above—the facilities to pre-assemble and test at the factory presses designed for utmost dependability, accuracy and flexibility of production at remote plant sites.

If you are now considering a new board plant, we cordially invite your inquiry at the earliest stage of planning. Write or call Washington Iron Works, 1500 Sixth Ave. South, Seattle 4, Washington.

The 3,350-ton, 12-opening, 76" x 130" Washington press, shown above during final assembly and testing, is equipped with stepless control of timing, pressure and board caliper, to permit automatic cycle production of softboard, composition board and hardboard. Patented Washington features include simultaneous-closing, counter-balanced platens with temperature-compensated platen guides. This is one of three presses being supplied by Washington Iron Works for Venezuela's first bagasse board plant, soon to begin production.

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SPECIAL HYDRAULIC PRESSES • AUTOMATIC PRESS LOADERS AND UNLOADERS • COMPLETE DRY PROCESS HARDBOARD AND PARTICLE BOARD FORMING LINE EQUIPMENT

WASHINGTON IRON WORKS

WASHINGTON PRESSES

and ACCESSORY EQUIPMENT

Hardboard Meets The Challenge

By: WALTER C. WALLING, President, American Hardboard Assoc.

WALTER WALLING

Portland: Today, the American hardboard industry faces challenges from within and without. We are faced with severe competition from foreign hardboard producers that have taken a substantial toll of profitable markets. At the same time, domestic manufacturers vigorously compete against one another for the same trade.

During a declining market — as existed in 1960 — and with increasing costs facing the industry, this dual competition has resulted in domestic plants operating well below rated capacities with unfavorable unit returns, adversely affecting corporate earnings.

To meet this situation, manufacturers must develop dependable quality and specialty products, maintain continuing research and development programs. Astute market knowledge is essential. A complete line as well as specialties is essential. An aggressive sales program must be capably managed, going through established and efficient outlets, and be backed by strong promotional efforts. More costly in terms of dollars-per-unit or percent, hardboard sales efforts are much more than most lumber or woods products management are accustomed.

Reasons for high sales costs are relatively low dollar value per unit of sale, difficulty in getting effective sales effort from the middle-man since hardboard is a small part of his business; the wide variety of product qualities, and the fact that various manufacturing processes and species have retarded development of industry-wide grades and standards.

The "Plus Value Program": The American Hardboard Association, representing nearly 98% of domestic production, has taken a "long and hard look" at the imported board problem.

As a result a "Plus Values" program was implemented less than a year ago.

The program emphasizes benefits obtained by selling and using domestic hardboard. Recognizing a positive approach was essential to give building materials dealers and industrial users common-sense reasons for purchasing domestically - produced hardboard, the "plus values" theme will be as strong 10 years from its inception as it is today.

The program has taken the form of an integrated advertising and public relations campaign built around a keystone illustrated booklet entitled "A Pig in a Poke Is Not for You." It emphasizes values of well-known, name-brand American boards enumerating advantages such as quality, uniformity, dependable supply and delivery, technical and sales assistance from manufacturers. Articles also appeared in newspapers and trade publications on this theme. Promotional packets were supplied each member with ads and publicity reprints for distribution to sales representatives.

(Continued on page 22)

A Look At The Particleboard Industry

By: RICHMOND GRAY, President, National Particleboard Assoc.

RICHMOND GRAY

Waverly, Va.: The mat-formed Particleboard industry has experienced significant growth in the past ten years in percentage gains in production and sales. Compared with such kindred giants as the fir plywood industry, the volume is paltry indeed, yet the industry is young and has had phenomenal growth.

The important thing is pretty much wrapped up in the question of "where do we go from here?" Out of the seeming chaos of a new industry, the particleboard producers find that they have achieved a very gratifying degree of acceptance in a field of rather broad application. The industry has also been taught quite a few lessons in what it must do and what it must not do.

Past instances of new producers with inadequate financing to permit sound market development, and resultant distressed selling, short cuts in quality control and misrepresentation of product suitability for specific applications, have done much damage. More reprehensible has been the fact when reported to by producers not suffering from pangs of financial pressures. Another setback that may be measured in millions of dollars, has been lack of self-discipline. As an instance, the industry rushed in to sell particleboard as an underlayment material for resilient type floor coverings before full evaluation was made of exactly what is required of the product for this specific application. Industry errors in this field where particleboard should now hold a position of pre-eminence, have set it back 2 years.

A contributing force toward correcting industry abuses has been the National Particleboard Association. Although it has functioned as the rallying point for the industry for only a brief time, it has already created among its members a sense of strength through united effort. It provides a forum for critical examination of the problems of the industry and for sound planning to correct these problems. It affords a pool of technical know-how which can function, wherever appropriate, as a force to assist in attaining objectives of great importance to the industry. It has been successful in obtaining initial Commercial Standards. Continued work in the direction of the refining and improving commercial and industry standards will always be one of the prime functions of the Association. It affords an industry voice in dealing with inter-related matters between other industrial groups, associations and industries.

Particleboard Production Advantages: The manufacturing process is a highly automated one and will surely command pointed attention by management in the look ahead to new markets. It can be produced from low cost wood material of many spe-

(Continued on page 22)

Particleboard Standards

(Continued from page 19)

dustries who use particleboard. This is being done principally through their respective trade associations.

Present membership is composed of 16 domestic producers of mat-formed wood particleboard, representing a substantial portion of the country's annual production.

At its second meeting in Washington, D. C., in January of 1961, Mr. Richmond Gray, Gray Products Co., Waverly, Va., succeeded Mr. D. C. Greeley, Weyerhaeuser Company, as president. Other new officers are W. H. Cooke, Pacqua Div., Pacific Plywood Co., Dillard, Oregon, vice-president; C. G. Reiter, Formica Corp., Farmville, N. C., secretary; and R. L. Rinde, Weyerhaeuser Company, Tacoma, Wash., treasurer.

Hardboard Challenge

(Continued from page 21)

Stimulus of competition on the other hand, has stepped up research and resulted in new products for new applications, improved quality and better products for existing applications.

Today manufacturers are all devoting more attention to product development and market research. It is mandatory that no product be created in a vacuum, but rather be tailored to a definite end use.

The next five years will see an increase in numbers of visual applications for hardboard. More specialty boards will be engineered to specific end uses. Breakdown of the markets will probably remain about as today, with 50% of production going to home and commercial construction, the other 50% sold for industrial uses, furniture and fabricating.

Hardboard sales volume has been reasonably good considering the past period of recession, with 1960 shipments down only a few percent from the record 1959 output. An encouraging long range forecast is justified.

Particleboard Industry

(Continued from page 21)

cies. Adequate raw material is available in many sections of the country and it can develop over a wide geographical area.

The manufacturing process lends itself to a high degree of flexibility for application of engineering to produce a broad spectrum of products for specific uses. Aside from the panel material, there appears to be a huge potential for molded products to which it lends itself.

Future Prospects for Markets: I am impressed with the near-term possibility of particleboard being used for exterior applications. Extensive research is continuing in the direction of developing a satisfactory resin which would permit wider exterior usage. Either in its natural state, coated or laminated in some manner, exterior panels are a near reality. The footage volume, if particleboard can be economically used as a siding material, sheathing and roof decking is staggering in relation to current interior applications.

Another area of market expansion appears to be in further extension of use as underlayment for floor coverings. Great assurance in this market potential is derived from the opinion of some very large manufacturers and marketers who produce hardboard and plywood as well as particleboard, that "properly manufactured particleboard is an odds on choice as the best for floor underlayment."

It seems that the industry has no real problem other than to use its collective head in a sensible manner in order to enjoy the fruits of this large market.

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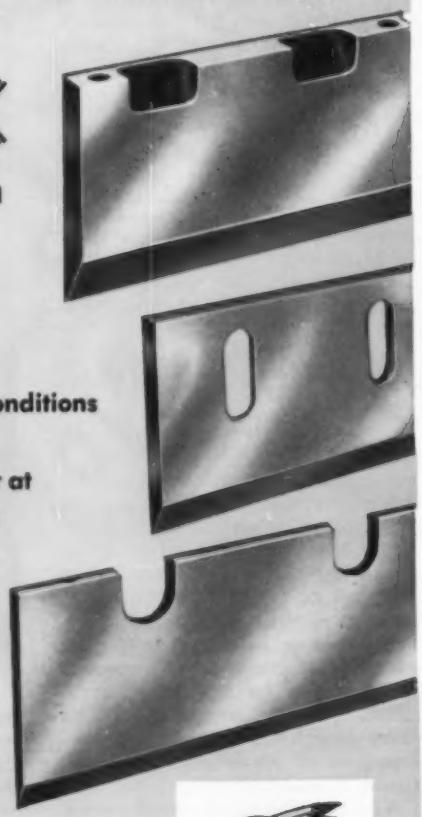

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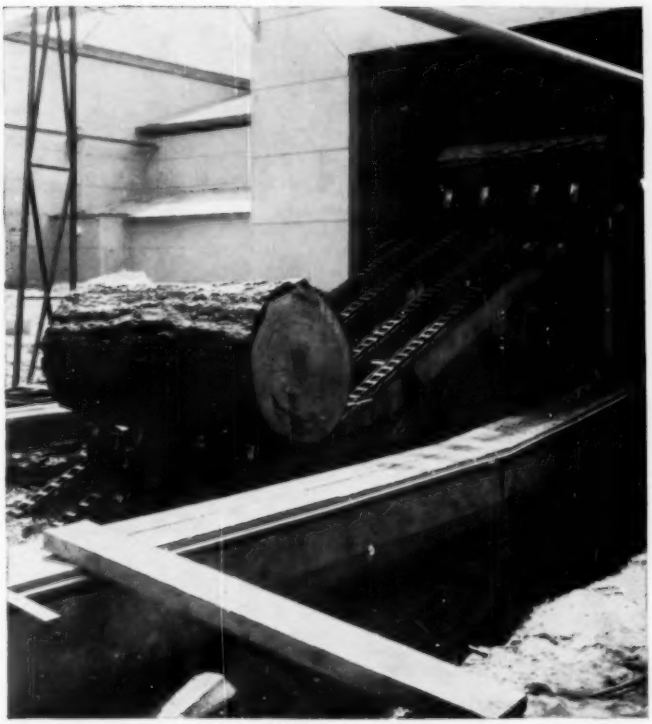
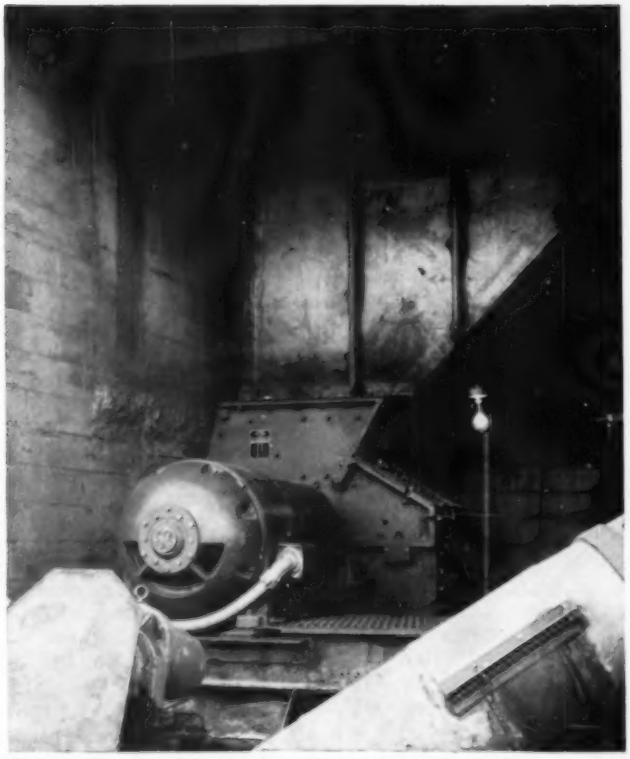


Type PW Jeffrey Chain and attachments on a log slide.



This Jeffrey wood hog reduces heavy waste for fuel.

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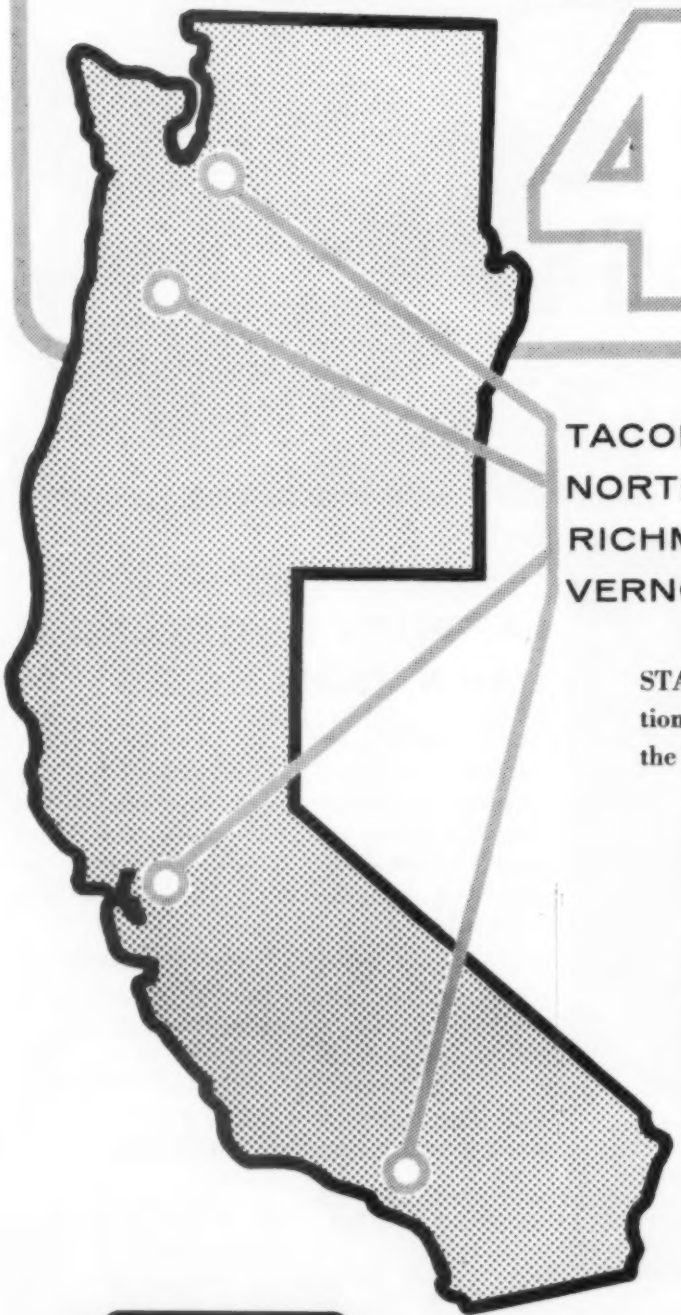

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WORLD REPORTS

United Kingdom

By ARTHUR JONES
United Kingdom Correspondent

London: Fibreboard business in the United Kingdom has continued to grow, but in 1960 there was a marked slackening in the rate of increase, and profits were much reduced. So much new production is chasing available markets that competition has reached new peaks of severity, a trend which continued into the first quarter of 1961, when the price of hardboard slumped to below $25 per M sq. ft.

At the beginning of 1960 there was a price agreement among the Scandinavian hardboard mills and the UK importers. Minimum selling prices between shipper and importer, and between importer and customer were agreed in contracts, but as the competition stepped up, the agreement collapsed and it became a free-for-all.

In the insulation board trade, the Nordic countries and British factories came to an agreement to limit output in standard board, though no agreement was reached on prices.

A depression in the UK furniture trade caused a fall in the demand for particleboard and the largest UK factory reduced output by one-third. Stiff competition came from flaxboard imports from Belgium.

British hardboard imports in 1960 were 555 million square feet as against 524 million square feet the year before. Most of this material came from Sweden, 364 million square feet; followed by South Africa with 69 million square feet and Finland with 27 million square feet.

Insulation board imports into the UK reached 65 million square feet in 1960, an increase of four million square feet over 1959. Most of the insulation board came from Sweden, 17 million square feet, and 15 million from Norway and Finland.

British home production of wood particleboard was 34,700 tons and imports were 19,400 tons which was a small reduction from 1959. Easily the largest shipper of particleboard to the UK was Finland with a total of 12,000 tons. Flaxboard imports were 15,000 tons, and this showed an increase of 4,000 tons over 1959. 12,000 tons came from Belgium.

There was a big price advantage with flaxboard, which was used widely in the furniture and construction industries, and the popularity of

this material was held in Britain in 1961 in spite of price increases of around 12%. More flaxboard plants are being built in Belgium to meet this growing demand, but some plans for fibreboard mills in Sweden have been abandoned.

All the European fibreboard manufacturers continued to support financially the Fibre Building Board Development Organization in the UK, and this body concentrated upon propaganda for boards in the main consumer markets.

A boom in the UK building trade helped this work, and the only reason that the British fibreboard market did not do better was that production went such a long way ahead of consumer demand. Manufacturers flooded the market, and this led to the price competition.

By late summer of 1961 the main supply countries will have the benefit of a 30% tariff reduction, which should be a particular help with particleboard carrying a 20% duty in the UK. This will mean more competition for British mills turning out fibreboards and particleboard.

Sweden

Sweden's production of wallboard rose by 51,000 tons to 608,000 tons in 1960. Exports were up 24,000 tons to 414,000 tons while home market deliveries increased by 1,700 tons to 179,000 tons (this included 149,000 tons of hardboard and 29,000 tons of insulation board).

Of the Swedish exports, the UK absorbed about one-third of the total, or 133,000 tons. Exports to the Common Market countries, 107,000 tons, were up 14% over 1959, whereas shipments to the United States and Canada, 61,500 tons, declined by 12%. Exports to other overseas countries rose by 14% to 69,500 tons.

Finland

Finnish board trade in 1960 showed increases over 1959. Wood particleboard production was 86,700 cubic meters, compared with 68,200 cubic meters in 1959. Exports were 39,840 cubic meters, a 2,000 cubic meter increase over the previous year. The UK was the largest buyer, taking 17,850 cubic meters.

Finnish fibreboard production was 123,100 tons of hardboard and 68,500 tons of insulation board. The total of 191,600 tons is compared to the 1959 total of 164,700 tons. Britain received 14,300 tons and the U. S., 10,300 tons.

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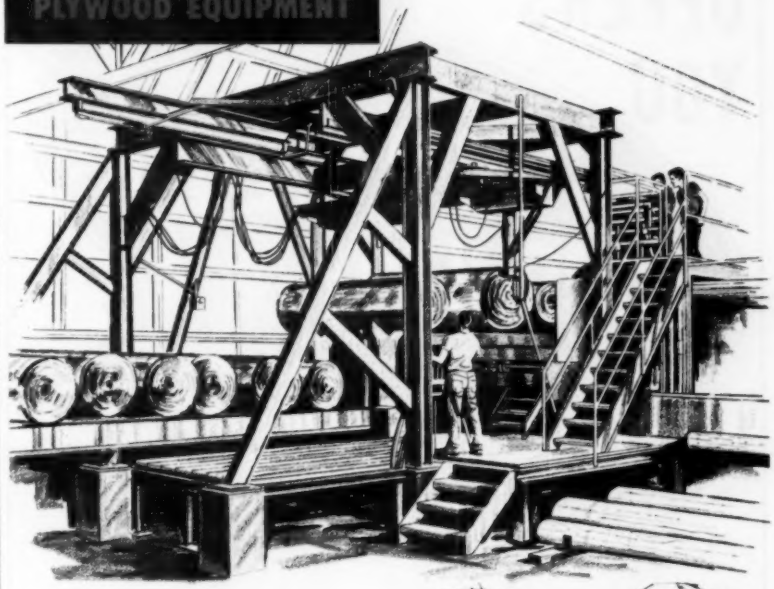
EDERER

PLYWOOD EQUIPMENT



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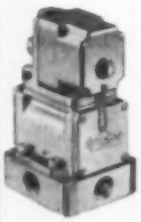
The addition of Nopaxam palm button, cam, lever and air operated valves "closes the Nopak circuit." Precise control — mechanically or electrically signaled — can now be *completely* Nopak. Singularly or in combination, Nopaxam, Nopak "V" valves and Nopak-matic valves will meet your most complex circuit requirements.

Nopak "V," 4-Way, Pilot Operated Slide Valves

For direct or remote control. Either single or double air pilot or solenoid actuated. Simple, proven design, durable construction insure trouble free operation. See Catalog 102-A.

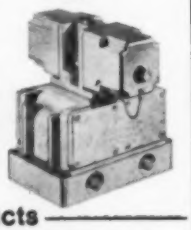
Nopaxam Precision Spool Valves

For air or hydraulic service to 150 psi. Pilot or mechanically operated, these valves are small, compact, easily mounted, have extremely short throw and high flow rates. See Catalog N.



NOPAK-MATIC Poppet-Type, Pilot Operated Valves

Fast acting, high volume air valves from ¼" to 1¼" with master (air piloted), single or double solenoid. Side or bottom ported subplates or manifolds. Removing cover plates affords easy access to piston poppets housed within removable, interchangeable cartridges. 100% J.I.C. See Catalog 105.



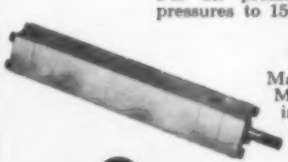
Other NOPAK "CVA*" Products

NOPAK Class 1 Cylinders

Brass Tubing and Tie-Rod Construction. For pressures to 250 psi. Choice of adjustable cushion, self-regulating or non-cushion heads. Diameters from 1½" to 16". 6 Standard Mountings. See Catalog 101-A.

NOPAK Class 6 Bore-Rated Cylinders

Compact steel plate, square head with tie-rod and honed steel tubing construction. For air pressures to 250 psi. hydraulic pressures to 1500 psi. See Catalog 106.



NOPAK Class 7, Square Barrel Cylinders

Made with pressure-cast and extruded aluminum. Mounting holes can be drilled or tapped directly into cylinder tubing. ¾" to 3" bores pressure rated for 200 psi. air or 1000 psi. oil. 7 universal mountings. See Catalog 107.

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WORLD REPORTS

Belgium

There are ten flaxboard factories now in production in Belgium and plans have been announced for another three. One new factory will enable the firm of Wielexco to treble its output. Throughout the European fibreboard market there is concern over increasing stocks and falling prices. No sign of a solution to these two problems has appeared.

Japan

By KENJI SAKAI
Japanese Correspondent

Tokyo: The great typhoon that hit the Nagoya district in September, 1959, caused a temporary suspension of plywood production from that district. This catastrophe provided help to the board industry.

Use of hardboard in other fields has extended even beyond the industry's expectations. Softboard insulation boards are also gaining greater recognition. The fear of overproduction prevalent in the board industry before 1959 has disappeared. Well-equipped new plants are coming into production continually and there is no serious anxiety for marketing.

It was just 10 years ago that particleboard was first produced in Japan. It was first used in building and then in other uses such as furniture and sewing machines. It was used first as a substitute for sawn lumber in building, but it is now on its own merits.

Model houses displaying hardboard and softboard uses were built in Japan in 1960. Building materials manufacturers also exerted effort in developing fire resistant materials so as to be eligible for a specific marking privilege pursuant to new legislation pertaining to fireproofing.

The following demand increases for the 1961-62 fiscal year are predicted by MITI: hardboard—30%; softboard — 25%; particleboard — 32%. The large increase of hardboard and hardwood veneer-covered particleboard exports from Japan has ceased.

South Africa

By TOM MACDONALD
So. African Correspondent

Johannesburg: There have been no marked developments in the particleboard, hardboard and insulation board industries in South Africa during the past year, but the fact that the industries have maintained production and sales is quite an achievement, because there are so many factors pointing to a decline.

In 1960, there were many disturbances. In common with many industries, the board industry lost heavily through the stay-at-home strikes.

There were boycotts in the traditional South African markets overseas. Two of the biggest producers, Novo-Board of Port Elizabeth and the national concern of Masonite, were especially worried when they were hit by the West Indian and Malayan boycott. There was the added threat of a boycott in the North African territories. The great fear was that a boycott plan in Britain would hit their best export market, but it failed.

Despite political turbulence with South Africa voting for a republic, the industry weathered its difficulties.

Now with South Africa withdrawing from the Commonwealth, the new fear has emerged that the Union might be affected in the British export market. South African and British trade interests say that the two-way trade will continue.

In any case, should the South African wood processing industry find the British market closed to them, the immediate effect could be disastrous. South Africa must not only hold its present market, but find new ones if it is to sell its surplus board production.

In the pine particleboard field there are three big mills, Plywoods of Parow, Cape; Novo-Board of Port Elizabeth and Peak Timbers of Swaziland. Peak Timbers is linked with Veneered Plywoods of Boksburg, near Johannesburg. The whole concern is now in the massive Anglo-American group of financial and industrial interests with large mining and diamond rights.

Nearly all the particleboard products go into the furniture and building industries and both industries have slackened in 1961. The plea is to encourage greater immigration to South Africa to provide markets.

Masonite (South Africa) Ltd. dominates the hardboard and insulation board market in the Union. Sales in South Africa and Britain were increased. Masonite, which registered a substantial loss in 1959, showed a profit of $360,000.

Canada

By F. W. KING, director
Forest Prod. Lab. of Canada

Ottawa: The Canadian wallboard industry is in a healthy state. Although there has been a slowdown in housing construction during the past two years, the production of wallboard has been maintained at a high level.

This has been accomplished as a result of market development and a

(Continued on next page)

Is your figurework done blindfold?

If you removed the blindfold, you'd see a window that looks like this. It's a "Check Window" that shows a full registration of figures entered—*while there is still time for their correction.* Of all the ten-key adding machines made in America today, only the Friden has it. All others are "blind". The operator can't tell what figures she has entered until they are added or printed. Then it's too late.

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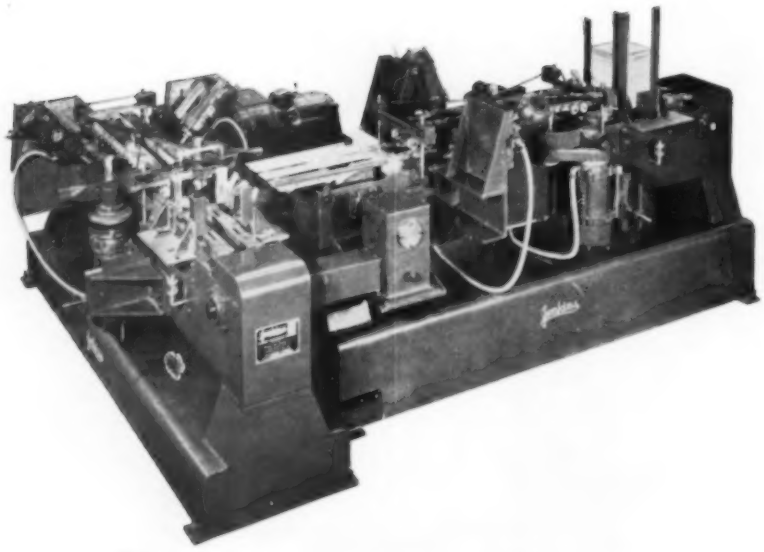

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Jenkins Double Pass tile sizers produce tile from plywood, particle board, hardboard or wallboard at speeds up to 120 tile-per-minute! Gives you any type of joint, too, plain, tongue and groove, shiplap — you name it! Add a Jenkins Dado attachment and you can surface groove simultaneously. A Jenkins tile sizer takes just 96 square feet of floor space and one operator — the hopper feed, automatic transfer and patented Oilomatic feed chains are practically service-free. Check your current production costs on floor and ceiling tile — then get full details on a new tile sizer — a new Jenkins Double Pass Tile Sizer, of course!

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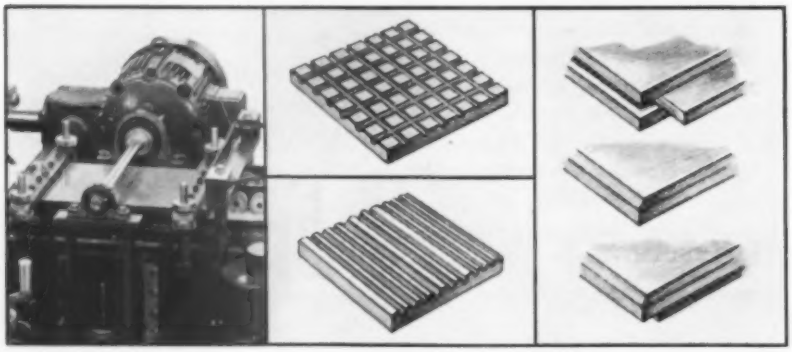


WORLD REPORTS

vigorous research program which has created new products, improved existing products and effected economies in production. Much more research and effort will be required if the industry is to maintain its rate of growth and prosperity, however.

The production of rigid insulation board in Canada reached a record high in 1959 of 452,711,500 square feet, ½-inch basis. This was an 11½% increase over 1958. Estimated 1960 production declined 2%. During an 8-month gauged comparison, roof insulation board increased 11% over 1959, decorative board increased 4%, asphalt sheathing board decreased 9% and other forms of rigid insulation board decreased 50%.

Hardboard production also reached a new high in 1959 with 265,743,700 square feet, ⅛" basis. This was increased 3% in 1960. Untreated or untempered board production increased 18%, semi-hardboard 4%, but treated or tempered hardboard dropped 33%.

Canada is now producing particleboard at a rate of about 60,000 tons per year. There are now two plants in production, three under construction and others on the way.

Insulation board exports amounted to 11% of the total production in 1959. About two-thirds of this amount was exported in 1960. In 1957, hardboard exports were 35% of production, in 1959—22.1% and in 1960—13½%. Particleboard exports so far are insignificant.

In wallboard manufacture, the trend has been away from raw material species in demand for the pulp and paper industry. This has come about mainly on competitive and economic grounds.

The application of wood-grain patterns to hardboard has reached a high degree of perfection and wood-grained hardboards are widely used in competition with plywood.

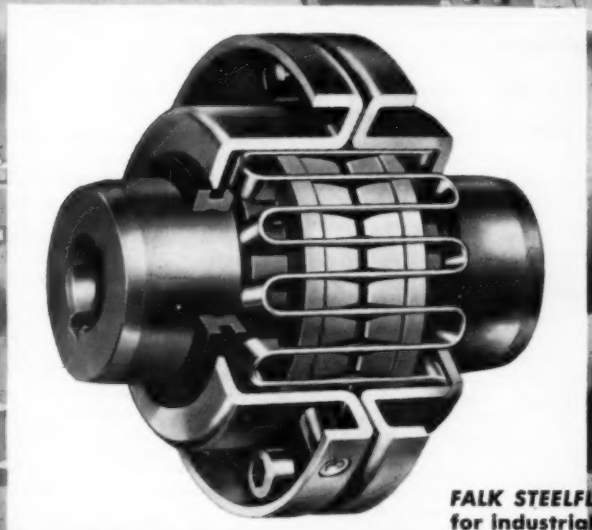
During the past year, end-use specifications for particleboard have been prepared by the Canadian Government Specifications Board. These specifications have assisted in marketing particleboard as the trend is toward producing products tailored to specific end uses.

Research is being carried out with the aim of utilizing, at least to some extent, the so-called weed species, sawdust and various types of bark.

In the case of particleboard, the cost of the binder can represent up to one-half of the production costs. Efforts are being made to develop more economical binders. Other research is studying the effect of species and particle shape on product properties.

FALK

A GOOD NAME IN INDUSTRY



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Giant Falk Coupling smooths out steel blooming mill performance

On a blooming mill at the Copperweld Steel Company plant in Warren, Ohio, installation of a large Falk Steelflex coupling between motor and pinion stand eliminated troublesome noise and vibration which threatened to damage mill machinery. Transmitting 5,000 hp at 50/100 rpm, this is not the largest Falk coupling... others are designed to transmit up to 130,000 hp at 100 rpm.

This installation and others like it prove the Falk concept of shaft coupling design—namely, a modern shaft coupling must contribute to the successful performance of the machinery system.

What does this mean to you? Just this: On large machines as well as small, the exclusive Falk grid-groove design does make a difference, and the difference is torsional resiliency with the strength of steel...reason enough to specify Falk Steelflex couplings as "long life" insurance for your connected machinery.

Falk Steelflex couplings are available in standard designs in 34 sizes for applications from .3 hp at 100 rpm to 130,000 hp at 100 rpm, with excellent delivery. Write for Bulletin 4100.

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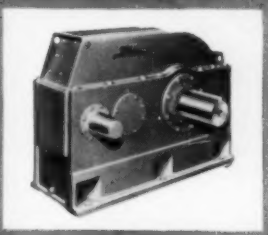

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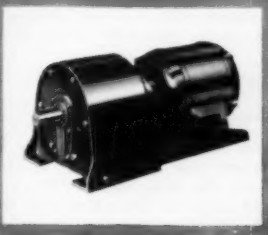
Parallel Shaft up to 3500 hp. Ask for Bulletin 1100. Also Right Angle and Concentric Shaft designs.



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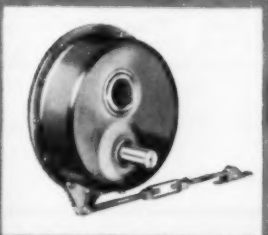

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IS A PARTICLE BOARD PLANT PRACTICAL ...FOR YOU?

Here are a few pertinent questions and answers to help you determine the advisability of considering a particle board installation.

Q — What raw materials are used in the manufacture of particle board?

A — All residues from primary forest products—small and cull logs, tops, peeler cores, veneer waste, slabs, edgings, trimmer ends and other sawmill waste. Some planer shavings may be used in conjunction with other residue. Bark and sawdust are not usable.

Q — What amount of residue is necessary?

A — An economical operation may need as little as 30-35 tons of green residue daily.

Q — In what major respects does an Induma plant differ from other particle board processes?

A — There are many advantages in the Induma method. Read some of them in the block on the right.

Q — What are labor requirements?

A — Since the Induma Process is almost totally automatic, as few as three men per shift may be needed.

Q — Are manufacturing costs reasonable?

A — Yes, with an Induma. Even in the smallest plants it is often possible to produce ¾" boards for as little as 8½ cents per square foot, including materials, labor and depreciation and maintenance of plant.

Q — What initial investment is required?

A — The amount varies with capacity desired and local conditions. The range generally runs from $450,000 to $2 million.

Q — How is an Induma plant engineered?

A — Once you have become convinced that an Induma particle board plant can be utilized, an Induma engineer will help select the site, specify the correct machines and equipment and furnish plans for the building and placement of equipment. His quotation will be accompanied by estimates of capacity, labor requirements and operating costs. When the order is placed, he will follow through with personal attention, including supervision of installation and training of production personnel.

Q — How can further information be obtained without obligation?

A — Fill out and mail the coupon.

A FEW FACTS ABOUT THE INDUMA METHOD

The Induma Process makes possible a three-layer board with high quality, structural strength and beautiful texture. (Less expensive single-layer boards may also be produced.)

Development of the three layers is automatically controlled. The coarser chips in the core cannot possibly protrude into the engineered particles of the outer layers.

The finished Induma board is highly suitable for veneering, since the patented spreading process assures a fully controlled board in three distinct layers with perfect hard, closed and smooth surfaces completely free of disfigure reflection.

The Induma Process utilizes a short drying cycle, sometimes as little as 6½ minutes. This is accomplished through an improved, exclusive method of additive application.

Any Induma plant will produce three-layer or single-layer boards in thicknesses from 3/16" to 1¼". Length and width are determined by the specifications in the original design of the individual plant.

Induma plants may be built with initial capacity in finished boards of 18 tons or more. The original design can provide for a later increase in capacity at small cost. This is a feature not possible with most other types of particle board installations.

The Induma Process is the development of H. F. Schwiertz, one of Europe's most highly respected consulting engineers.

Be sure to read Mr. Schwiertz' article on page 40.

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After reviewing your questions and answers, I feel additional consideration should be given the Induma method of particle board production.

Without obligation send us more complete information.

Name ..... Position .....

Company .....

Address .....

City ..... State .....

State of the BOARD Industries

The board industries were not spectacular during 1960. Generally production was down as well as was sales, following the trend of construction.

Particleboard producers reached agreement on standards—an essential to that industry's growth in all markets of the construction industry. One of its advantages is, however, its versatility. It may be made to specific specifications for special uses. Gains have been made in embossed faces, in fillers and sealers to improve the surface. Total number of plants is still said to be 50 to 55. Many of these are captive in the furniture industry. As statistics improve through the new association more accurate records will be available in the future.

Though hard pressed by imports of standard board, the hardboard industry is answering with more specialty and decorative boards, more promotional effort. Improved prefinishing and wood-grain printing is helping. Overproduction is their greatest concern, though 1960 was the first year since World War II that any setback in production has been experienced.

Insulation board manufacturers, maintaining their pace of new faces and new products, have held a continuous 10-year healthy growth. Recently established insulating ratings on fiberboard will help this industry grow. Patterns that must be recognized, are that all these boards are part of the wood products industry and as such fall into promotion and development of wood products. In many applications they may compete with each other and with plywood—but they all have their particular "best applications" in-use. Producers who have some or all of these products and lumber must research markets and develop the best combinations and use applications.

Needed to get off the ground are more combination uses with competitive materials such as aluminum, sheet steel, plastics and rock products as well as lumber and plywood. Because people want variety, and many times combinations are advantageous, new volume outlets should be exploited in this area.

During 1960, four new particleboard plants came into operation, 3 in Oregon and 1 in Arkansas, adding 64 million sq. ft. capacity. Four went out of business, losing 46 million sq. ft. 1961 will see 5 new plants in production and at least 3 more are expected in 1962.

PARTICLEBOARD (¾" Basis) Production—39 Plants		HARDBOARD (⅛" Basis) Production—17 Plants	INSULATIONBOARD (½" Basis) Production—23 Plants
1959	298 Million sq. ft.	2.1 Billion sq. ft.	2.88 Billion sq. ft.
1960	273 Million sq. ft.	1.9 Billion sq. ft.	2.62 Billion sq. ft.
Capacity	463 Million sq. ft.	2.9 Billion sq. ft.	3.7 Billion sq. ft.

Product Types	No. Plants Producing	Product Types	No. Plants Producing	Product Types	No. Plants Producing
Core	34	Tempered	11	Pre-coating	10
Furniture	29	Striated	7	T & G	9
Underlayment	19	Prefinished	10	Interior Finish	9
Cut-to-Size	24	Underlayment	13	Roof Insulation	14
Veneer Overlay	15	Overlayment	4	Structural	13
Cabinet	21	Decorative	7	Decorative	9
Prefinish-Prefill	8	T & G	5	Ceiling Tile	12
Floor tile-plank	2	Siding	9	Tempered	1
Construction	8	Etched	3	Siding	7
Decorative	6	V-grooved	10	V-Grooved	6
Sheathing	4	Other	11	Other	6
Paper-Plastic overlay	8				
Other	12				

Behind the scenes in

Taking a decorative panel

First to produce such hardboard panels as: tongue and groove; ¾" door stock; sealed, tempered hardboard; pre-finished tempered hardboard in light color; ⅜" siding, here is what is involved in product and market research, new equipment, design, and promotion in launching the new product called Sandalite.

That, "you have to keep moving in the hardboard business," is axiomatic at Forest Fiber Products Co., Forest Grove, Ore. In the constant, competitive battle, ideas and creative thinking are a premium at this veteran company in product development and merchandising.

Constantly looking for new product ideas, this company works on the philosophy that hardboard is a definite product in its own right, not a substitute nor one that should copy another. Rather they take advantage of its own characteristics.

THE PRODUCT CALLED SANDALITE

Sandalite has a factory-sealed face to produce a stain and abrasion resistant surface. A grainless wood product, it is easily worked and fabricated with ordinary woodworking tools. Its surface, a mosaic "scatter pattern" is of blue, gray and white flecks that give it an unusually attractive design adaptable to many uses, yet with a distinctive appearance all its own.

THE RESEARCH BEHIND THE PRODUCT

Sandalite has a factory-sealed face to produce a stain as a result of a search for a new and refreshing decorative hardboard product that would expand markets. The search actually started in 1955 when Forest Fiber's first light colored *Sandalwood* was successfully marketed.

A sizable research expenditure was planned as the beginning and essential part of the plan. After considerable study technical director Keith Kruse came up with the idea for a decorative hardboard with some type of colored particle imbedded in the surface, using the already acceptable light colored *Sandalwood* as the background. During the period of experimentation, particles of all shapes and descriptions from pea vines and leaves to insects were tried. Different background colors were tested. Kruse ended up his search with a particle design and method that filled the need.

The next step was to translate the laboratory development into actual production in the plant for there is often a broad step between laboratory and production under plant conditions. Dozens of problems and setbacks were encountered in this process until the final answer was found—one that would actually manufacture a quality product both in structure and design.

A LOOK AT THE MARKET

With the process determined a market study to determine possible demand had to be made. They must know if the design and colors would be acceptable; how it would fit into existing markets; what new markets it might open—or whether or not they would have to start all over again at the laboratory.

The problem was laid before architects, builders, distributors and industrial customers in larger national mar-

to market

In a typical planning session that covered everything from product to promotion to markets, are left to right: Henry Jacobsen, sales manager; George Wann, merchandising manager; F. M. (Tom) Hughes, general manager; Keith Kruse, technical director and Gene E. Tower, hardboard plant superintendent.

ket areas. Survey results over a period of months looked favorable. It also indicated that the colors used would be important and there was nearly as wide a variation in color ideas as there were people interviewed. A blue for one was not a good blue for another. Many thought yellow, green or brown should be the particle colors.

The interest was intense. A design and color consultant was finally called in to help determine the final choice, and this only after months of trial and error of many color combinations. Reasoning for the soft blue and white and gray flecks finally selected, was the achieving of a neutral tone that would be acceptable by the largest number of people and would blend with any room decor.

THE DECISIONS OF MANAGEMENT

Before proceeding into full scale production and promotion it now had to be recognized that a large sum of money must be allocated for research, equipment, man power, promotion and sales. Such allocation had to be made over and above that required for normal plant operations to maintain production of the balance of the full line of hardboard products. General manager F. M. (Tom) Hughes had to consider these problems:

1. Will the markets indicated be substantial and profitable?
2. Can the present marketing organization sell the product?
3. Does the product actually fill a need, or is it only a fad?
4. Can the product be made with present equipment? If not, can the estimated cost of capital investment be covered by increased sales?
5. What will be the continuing costs of research and development?
6. What is the probable useful product life? Will it be a repeat item?
7. What is the relative desirability of spending money for this product as against other potential products?
8. What will be the estimated profit on total investment during the first few years of production and sales?
9. How long will it take to amortize initial investment?
10. Can the product and name be protected by patent and copyright?
11. How does the new product fit in with abilities and experiences of Forest Fiber and will it help boost sales of the rest of the line?

EQUIPMENT DESIGN AND DEVELOPMENT

Once the green light was "flashed" to proceed with production, the several months of designing and assembling of equipment was started. In this case, the equipment was designed and built by the company's own maintenance department. Then came the usual trial run problems and necessary several weeks for equipment modifications. When the shake-down period, after final modifications ended, the new product was a reality. Patents covering the manufacturing process and the product were applied for and the name *Sandalite* was registered as the product name.

PROMOTION TAKES OVER

At this point the production problems were complete but costs were at the halfway point. Now came the real marketing test. The already planned and coordinated advertising, public relations, sales promotion and merchandising plans swung into action.

The promotional program had been started early in 1960 and kept pace with product development. In November 1960, a target date for a press conference was set for Feb. 7, 1961, to first introduce *Sandalite*. During the interim period, product tests,, information, technical material, samples and photographs and sales pieces were readied for distribution and for press kits. The day following the conference articles began to appear in newspapers, magazines and on television and radio news casts.

An advertising campaign was released to reach architects, builders, building material dealers, cabinet shops, commercial and industrial prospects, and in fabricating of furniture. Each advertisement invited the reader to send for a sample and further information. This was backed by other merchandising aids.

The company's own employee's publication reached all employees and their families telling them about *Sandalite*. The external house organ was mailed to more than 12,000 builders, architects and dealers and fabricators.

Merchandising aids included a technical bulletin for AIA file folders telling of *Sandalite* and the complete line of Forest Fiber products. A color folder for answering all inquiries, not only told about *Sandalite*, but about the entire line. Forest Fiber salesmen distributed literature to both distributors and dealers . . . and the new product proved to be a perfect opener for the company's full product line.

Additional activities included special exhibits at retail dealer's conventions; samples with fully descriptive labels; the wainscot display kits for sale to dealers for use in display rooms as well as providing a handy package for buyer purchase. Advertisement reprints were furnished both salesmen and customers.

The entire promotion of *Sandalite* was designed to assist Forest Fiber Products' salesmen to sell not only *Sandalite*, but the complete line. The plan coordinates many means of communication and devises to create a desire for the product and services.

Today, the promotion plan is working and the product is gaining fast and wide acceptance, but only after more than a year of market research and product development, and months of advance promotional planning to finally launch the product.

House siding is ¾" 4'x9' exterior custom-bond panels grooved on 12" centers. Panels up to 13' long used on ends to eliminate horizontal joints. ⅝" exterior custom-bond used for wall sheathing with ¾" exterior board used for roof sheathing at left and ¾" interior over garage at right.

Particleboard Test House Provides Showcase

Pope & Talbot, Inc., had run its exterior phenolic particleboard through the gamut of the American Society for Testing Materials accelerated aging test which included boiling, steaming, freezing, thawing and nearly everything adverse that can happen to a board. Their plant is located at Oakridge, Ore.

The board passed with excellent results, but Pope & Talbot thought the product, along with the firm's other particleboard products needed a day-to-day "living test."

"Laboratory tests are important," Ralph Peinecke, board plant superintendent, told THE LUMBERMAN, "but a field test is more significant." The outcome was the company's test house built in Oakridge, Ore. The house has three bedrooms, living room, family room, playroom, kitchen, two baths and a garage, all on one floor with a total area of 1,552 square feet. The ranch-style test house was designed by William F. Wayman, Portland, Ore.

The house is now passing the "family test" with three children, ages 8, 6 and 3 in the family. It has been occupied since last November.

Mr. Peinecke continued, "We chose a conventional house design and used particleboard wherever practical and economical in standard building methods. Conventional Douglas fir framing was used, but the balance was either particleboard or other products tested alongside our Customboard."

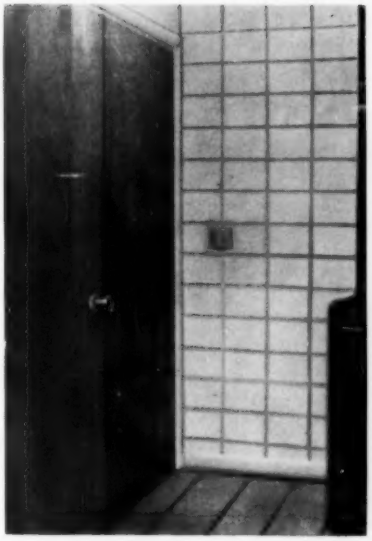
"We feel that our exterior particleboard is a good non-structural product for exposed or semi-exposed locations. For an architect looking for a rustic finish for a ranch-style home, it fills the bill."

Particleboard uses in the home include ¾" (both exterior and interior-type) roof sheathing under composition shingles; ¾" vertical-grooved

Family room adjoining kitchen has ⅜"x9"x9" 50# pre-finished Douglas fir custom-bond tile over ⅜" interior custom-bond underlayment and ¾" interior subfloor. Back wall is birch veneer over ½" custom-bond. Kitchen cabinet exterior, left, is 11/16" custom-bond veneered with birch.

Main hall employs walls of ½" 4' x 8' panels of interior custom-bond with eased edges applied vertically. Flat paint used on unsanded board.

Living room has accent wall of random-grooved walnut veneer over ½" interior custom-bond. Carpeting over ⅝" interior custom-bond underlayment and ¾" subfloor.



Entrance has accent wall of ¾" particleboard with scoring to simulate brick. Finished with flat paint. Book shelves of 11/16" custom-flake flakeboard veneered with walnut to match living room wall.

for Finish and Construction Board Products

siding over both ⅝" interior and exterior sheathing; ¾" subflooring throughout; exterior and interior underlayment in thicknesses from ⅜" to ⅝", depending upon floor coverage used; walls (½" thicknesses in both prefilled and regular); grooved regular finished ½" and pre-filled ceilings; kitchen cabinet core stock from 11/16" Custom-Blend veneered with birch; bedroom cabinets and wardrobes and shelves of pre-filled ⅜" and ¾" Custom-Bond and Custom Flake.

Custom-Bond is an all shavings board; Custom-Blend is a mixture of flakes and shavings; and Custom-Flake is an all flake board.

A number of side-by-side tests between particleboard and other competing products were engineered into the house. Among those are a plywood floor underlayment panel included in the particleboard playroom underlayment; plywood underlayment in one of the two baths and exterior particleboard in the other; both particleboard and gypsum walls; both particleboard tile and gypsum ceilings; particleboard tile and vinyl asbestos tile and vinyl sheet tile floors; 11/16" Custom-Flake with veneered birch and walnut and 1⅜" flush, hollow core, birch interior doors.

It is anticipated that through this "living" test under normal living and weather conditions, any problems for such applications may be pre-determined before any real marketing attempts are made in this field.

Both technical staff and management anticipate problems to arise that cannot be determined in the laboratory. Corrections or changes in product can be made and a real basis for standard requirements for housing applications can be set up.

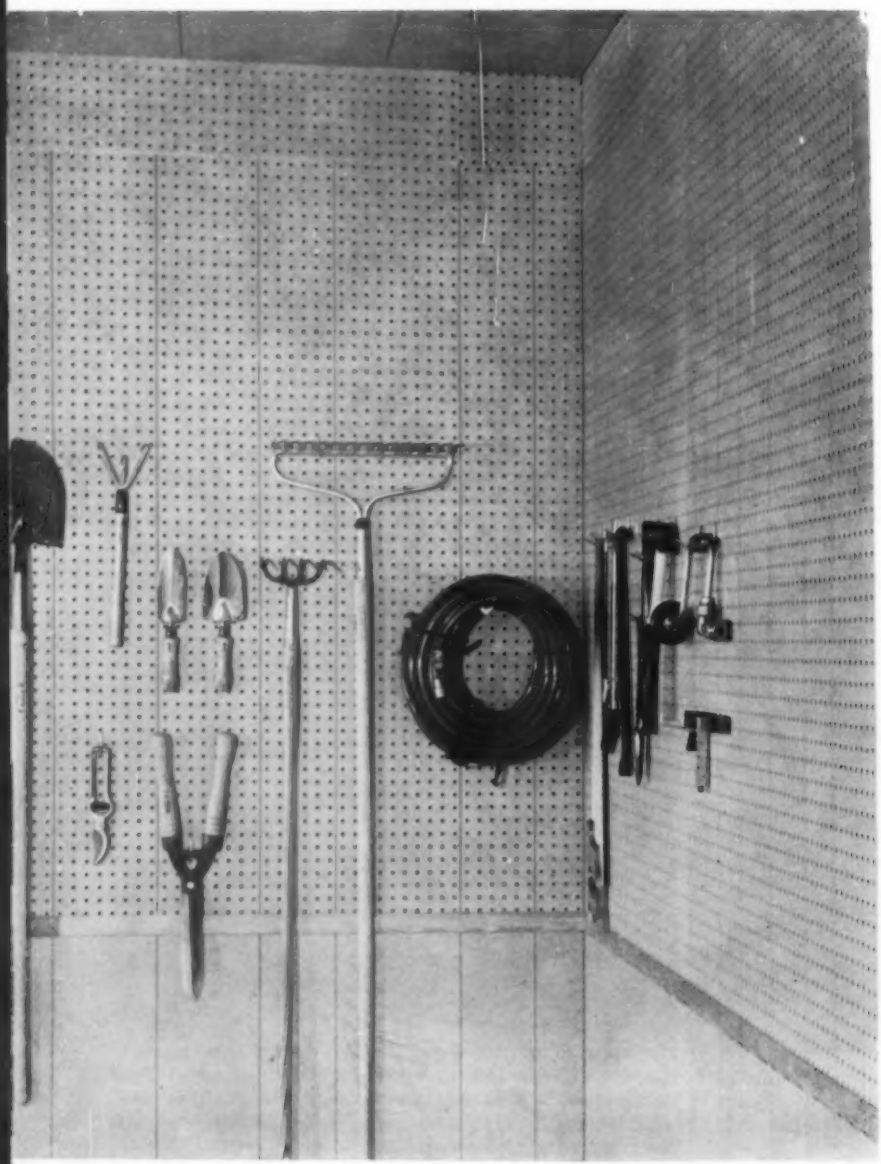
Bedroom entrance shows 4" and 6", ⅜"x96" prefinished 50# custom-flake ranch plank floors with eased edges. Hall in foreground is ⅜" 9"x9" pre-finished Douglas fir custom-flake flooring.

Playroom upper wall is ½" prefilled custom-bond random grooves. Lower 36" wainscoting is ½" interior prefilled custom-bond. Both are flat-painted. Sub-floor is ¾" custom-bond exterior, underlayment ⅝" interior custom-bond with one plywood panel.

Here's how Georgia-Pacific

TARGET HARDBOARD

Putting into action a hardboard promotion campaign that sold 28.5% more hardboard in 3 months than in the previous 7 months in 1960—and at a time of year when sales are normally low.



Selling is the crucial problem today. Almost anyone with sufficient capital and an ample supply of wood raw material, can conceivably build a hardboard plant. But this is only half the story. Without a "hefty" sales promotional budget a skillfully planned program, well-trained salesmen in the field, ample plant warehouse facilities and a working distribution program, a plant alone can be disastrous rather quickly, explains Walter C Walling, manager of hardboard sales for GP.

It takes special planning today with a customer oriented thinking, rather than production mindness, to launch a successful sales program such as this highly interesting and important story. Here is a program that brought GP more sales in the 3 months of November, December 1960 and January of 1961, than during the entire previous 7 months.

In face of the fact that the forest product industries, along with most of the U. S. economy, was experiencing a recession, and the normal year-end sales slowup, "we believed that this was the period when we needed some extra sales push. Besides that, it was a good time for us to really 'test out' what an allout sales effort could do," explains R. O. Lee, G-P's director of sales promotion and advertising. The "Target-Hardboard" program was under the direct charge of H. C. Ellicott, manager of product advertising and promotion, aided by A. W. Petrey, hardboard sales promotion manager.

This was not a "flash-in-the-pan" promotion. Although geared to be fielded for a 3-month period, it actually embodied an intensive sales training program for both G-P salesmen and for dealers. Results are proving it to be a continuing factor.

To begin with the company had two so-called new "hot items." One was

"fielded" its unusually effective hardboard promotion campaign

a garage liner, a light colored prefinished combination random V-grooved 4'x8' and ¼" thick, with smooth surface wainscotting, and perforated ⅔ upper section for hanging tools and garden equipment. The other was a new factory finished cabinet panel for cabinetmakers and furniture use.

These were selected as the "high interest" products for the campaign of "Target Hardboard" that would lead into stimulating more sales for the complete line.

Tough quotas were then set up for G-P's nationwide system of distribution warehouses, most of which were actually topped.

Here's how such a program was actually "fielded":

First a budget was set. This is no small item to meet today's competition.

1. A complete market breakdown was made to help estimate the potential, to determine emphasis in different areas, and the necessary approach.
2. Development of sales aids that ranged from direct mail to point-of-purchase, with the selection of the key products to be featured.
3. Development of a coordinated advertising program, ad production, and media scheduling.
4. Development of a coordinated product publicity program.
5. Preparing an all-inclusive salesmen's training manual to cover processes of manufacture, products and uses.
6. Preparing "Target Hardboard" manual to outline entire program with sales meeting schedules, techniques, materials, planning and all details of the program. Included was the analysis and data needed for each type of hardboard market, nationwide.
7. Planning, organizing and executing the program's introduction to G-P's field staff, involving meetings and staff presentations.
8. Gathering the thousands of dealer, builder and industrial names required for direct mailing program. Setting up the mailing program to coordinate with other phases of "Target Hardboard."
9. Follow-up of all phases of the program through coordination of sales and sales promotion personnel and branch managers.

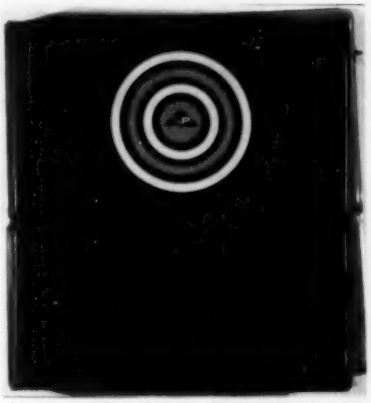
These were all preliminary readying and educational phases required before the sales program was actually begun.

Sales aids included wrap around samples of new products; a 4-page folder about new "Garage Liner"; a 1-page dealer invoice insert on garage liner; a brochure on "How to Use G-P Hardboard" with a dealer imprint; a 20-page salesmen's training manual; banners for dealer showrooms.

A real insight into the program is given in the thick "Target" manual published to combine training and to be used as a sales tool. It contains 9 separate sections, each telling a phase of the story.

Briefly, here is GP's "Target Hardboard," as outlined in the manual, now a part of every salesman's working library and in constant field use:

1. Management Guide: Outlines sales program in general. Sets up sales meetings and follow-up programs.
2. Goals: Outlines aims of program, why and how.
3. Dealer Section: Outlines sales approach related to retail dealers. Points out value of dependable supply source, complete line of hardboards, G-P guarantee, value of paper wrapping, national advertising and programs backing dealer; new products; value of having mill technician in each marketing area. Direct mail to both dealers and dealer customers is outlined.
4. Light Construction Section: Sales features; specific uses on the job and many case histories. Direct mail samples sent to some 30,000 customers of dealers, with dealers assisting in compiling mailing lists.
5. Display Firms: Here the new G-P square-hole perforated hardboard was a key product, as was garage liner for dealers. A 2000 direct mail program was set up.
6. Cabinetmakers: A new factory finished cabinet panel was feature here and was sampled to mailing list of about 5000.
7. Furniture Manufacturers: Implemented similarly, with products ranging from core stock to cabinet panel and fluted hardboard.
8. Industrial: Covered wide range of industrial uses and special field sales efforts in this field.
9. Literature: This section included samples of all new literature advertising reprints and copy, TV and radio spot announcements; standard literature already in the field and available for the special campaign.

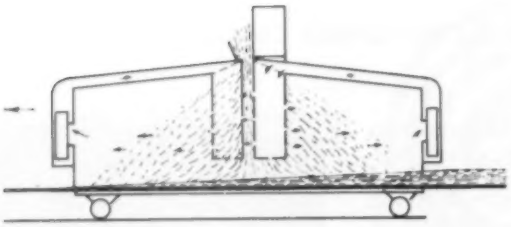


A comprehensive sales manual with complete line and marketing information was given to every salesman.

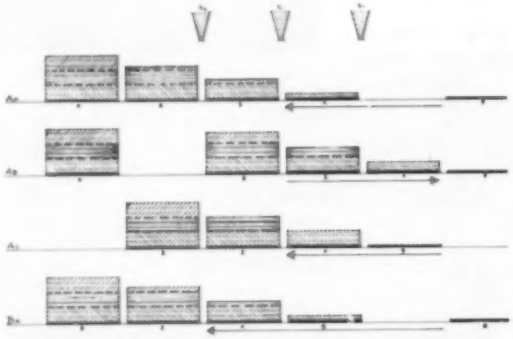
With the entire program coordinated and properly timed, orders for dealer promotion material had to be doubled in the first 30 days after launching. Sales results were 28.5% more orders than during previous 7 months. It not only introduced the new products but lifted the entire line sales to a substantial gain.

In the words of W. H. (Bill) Hunt, G-P vice president for plywood and specialty sales, "Today's selling requires today's selling techniques, and we had a lot of hardboard production to move. It moved. Sales rose. We have completed the 'Target Hardboard' program with our salesmen enthused, and equally important, with a well trained group of salesmen."

This advertisement appeared in many trade publications, introducing the new Garage Liner product.



TOP DIAGRAM shows new type of "graded" single-layer board whereby mattress is built up from one chip silo. Screening of particles is by mechanical or pneumatic acceleration when spreading. In this process, lightest and finest particles form the surface and heavier and larger ones gradually get into center of board.



ABOVE DIAGRAM shows layup system, and photo below shows the three spreading machines set in tandem for 3-layer board. To further improve on accurateness of spreading 3-layers, a new system has been developed recently whereby each layer is built up three times by each particle spreading machine. That is, nine times for the three layers. The equipment works so fast that plant capacity is not reduced when using the "Tandem System." Boards so produced have tolerance in weight, density, strength of about ±3%.

New European Developments in Particleboard Production

By H. F. SCHWIERTZ, Consulting Engineer
Industrie Maschinen G.m.b.H., Hamburg

To understand new developments in particleboard production in Europe, one must recognize the essential differences in markets for particleboard in Europe and in North America. Scarcity of sawable timbers in Central and Western Europe, after two world wars, years of import restrictions and heavy demands of new woodworking and furniture industries, stimulated development of wood particleboards of various types. These were primarily used in the making of furniture, but also as interior decorations, panelling and doors.

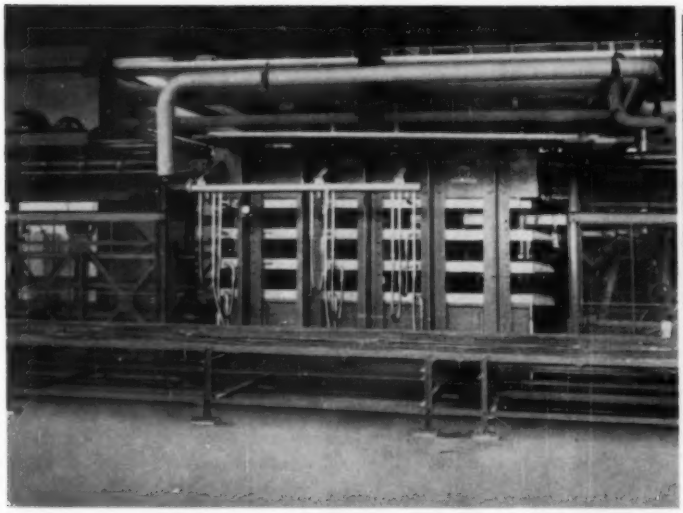
In this European area, nearly all forests are planted. As felling cycles become shorter, tree diameters are now reduced to a point where large numbers of trees can no longer be used economically for sawmilling. European sawmills are comparatively small family operations, due to raw material limitations. Only small quantities of chips are therefore available and transportation costs prevent collection at any one site. Only in exceptional cases could particleboard factories in Europe be started adjoining larger sawmills.

Most European particleboard plants are based on round timber of between 2" and 8" diameter, contrary to conditions in North America where ample residues and planer shavings are available.

Traditionally the Central Europe furniture industry produces high quality furniture. The demands from the start then had to be for top quality particleboard, to be worked like high grade lumber and be able to take top grade veneer overlays. It had to have minimum tolerances in dimension and strength properties to allow serial production of standard top grade properties. Boards produced from irregular shaped planer shavings or from a variety of chips obtained from regular chipper or hogger, would not work. Properties of such boards were uneven, varied and would telegraph through veneers.

Experience gained in practical production in more than 200 particleboard plants in Europe today has resulted in 90% of flat platen pressed particleboards being produced of the 3-layer type. Need for perfectly closed, smooth and dense surfaces of fine and small slivers, made necessary specially built, high precision cutter machines. Flat, long and thin flakes for core provide the necessary strength in bending and splitting, with good nail and screw holding ability at edges.

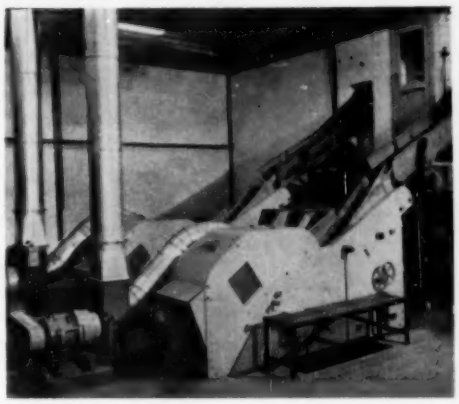
This type board can be produced either in three controlled layers of differently sized particles, or as a new type of "graded" single layer board. In this latter type, the mattress is built up working from only one chip silo, screening the finer and coarser particles by mechanical or pneu-



SHORTCYCLE PRESS: Production rate of particleboard plants has been considerably increased by using the "steam-shock" effect in pressing. In this case, it is necessary to dry core particles to less than 1% MC and mix them with richer glue solution of more than 50% solid content. Surface particles are kept more moist by less drying, more liquid glue mix, or by spraying mattress surfaces with water before pressing. Press temperature is increased to 185°C (365°F). Pressing time is reduced to 4½ minutes for ¾" boards up to 6'x12' sizes.

Short press cycle system has brought about a new type of hot press with temperature as high as 365°F and pressures up to 25kg/cm (356-psi) which closes slowly to mattress contact to avoid damage to mattress surface, and then rapidly to required thickness to prevent precuring of glue in surface. Because of its short pressing cycles, this press has to work fully automatic, reducing or increasing pressure during the pressing time at preset schedules. Controls are automatic.

TRANSPORTATION of timber, particles, mattress and boards has been mechanized. Practically no manual handling between log yard or log pond as shown above. Timber comes into plant by mechanical hauls and automatically feeds into special cutter machines in lower photo below.



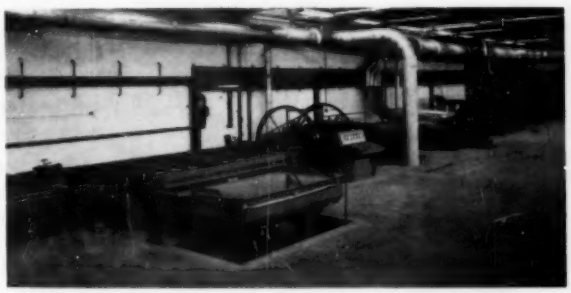
matical acceleration when spreading. In this process, the lightest and finest particles form the surfaces and heavier and larger ones gradually get into the center of the board.

The advantage, however, of the true 3-layer board over the "graded" boards, seems to be in better control of processing the particles and better regulated spreading of surface layer core. The 3-layer boards can be produced in greater variety of densities with a stronger surface and higher strength properties in the core. More accurately produced to specific quality standards, they show hardly any variation from board to board.

To control these high efficiency plants, new automatic controls have been developed in recent years, especially to regulate thickness of particles, the moisture content of wet, dried and glued particles, the weight of the spread mattress, and the density and thickness of the pressed and finished boards.

Plants are mechanized to the point where only a few skilled mechanics are to be seen, supervising automatic machines. This was essential in Europe, not because of high labor costs, but because of increasing shortage of labor generally. Following this trend, mechanization and automation of many machines have been developed, not requiring permanent attention.

In spite of the fact that production of particleboard in Europe was perfected to this extent, because of raw material needs and high standards necessary, American markets are benefiting now from experience and improvements made in these European plants. Several of the largest particleboard plants in the United States have been assisted by German consultants and engineers in both plant and equipment planning.

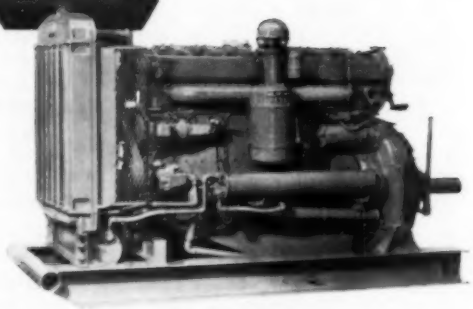


FINISHING OF PRESSED BOARDS is with fully automatic production lines from top and bottom sanding, calibrating and trimming. Electrical and automatic switch gear, preparation, mattress forming and pressing and board finishing is so far developed that it not only starts production, but stops flow lines automatically, partly or entire plant in case of breakdown in any spot. In automatic merry-go-round for cauls transport, a secondary control has been included which keeps the automation in waiting and allows restarting of complete system from one pushbutton central desk. Another control system stops the process automatically at "end-of-work," step-by-step storing all empty cauls in the caul stacker ready for the next shift.

Two letters to remember in diesel engines and generator sets . . .

THE MP SERIES

MURPHY DIESELS



Here's the **MP** *Series Line-up*

MP SERIES ENGINES AND POWER UNITS—105 HP to 420 HP, 1200 and 1400 RPM. **MP SERIES DUAL FUEL ENGINES**—147 to 242 HP.

MP SERIES GENERATOR SETS—70 KW to 227 KW.

MP SERIES MECH-ELEC UNITS for delivering mechanical or electrical power separately or simultaneously.

MP SERIES MARINE ENGINES AND AUXILIARIES—105 HP to 420 HP.

The 48-page booklet entitled "Before You Power a Job . . ." gives detailed information on MP Series Murphy Diesels. Ask your Murphy Diesel Dealer for a copy, or write direct. There's no obligation.

Deliver More Power Into the Job to Make More Profit for You

The power put into the job—not the power on the job, is the power that pays off for you. Engine reaction to load changes and speed changes determines the power that actually goes into the job. Only an engine with high rising torque can put more power into the job when needed.

MP Series Murphy Diesel engines are designed and built to deliver More Power into the job—the kind of *usable, hard-working power* you need. With high rising torque, they have the ability to take hold of a load and really hang on. This helps keep your equipment at the right operating speed for efficient production and More Profit. And remember, each day's production is determined by the *total power* put into the job that day.

To put MP Series Murphy power in your job, put Murphys on your job. You'll see the difference in your profits. Ask your Murphy Diesel Dealer for full information on the MP Series today.

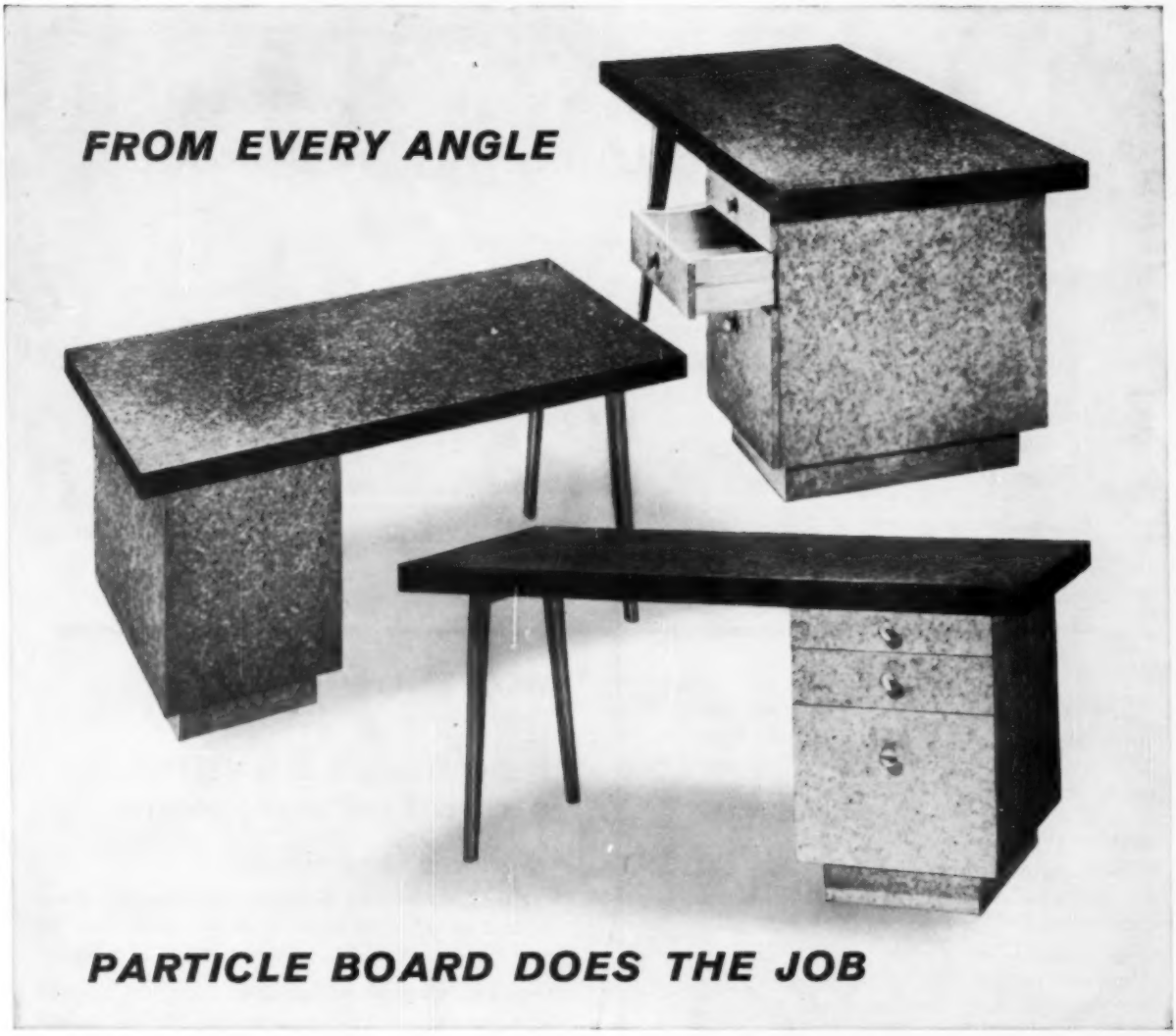
MURPHY DIESEL COMPANY

5351 W. BURNHAM ST., MILWAUKEE 19, WISCONSIN

MURPHY DIESEL

#433-L

Sales, service and parts throughout the nation



A Versatile Furniture Material

● The trend today is toward wider application of particle board in furniture manufacture.

Particle board is actually better than the wood of which it is made. It's tougher, harder, more versatile . . . free of grain, knots or weak spots. It's easily machined, holds screws better than lumber, and adapts easily to laminating and veneering processes. Successful uses of particle board in furniture today include cores, drawers, backing and decorative surfaces.

These and other applications point to an increase in usage that places added importance on the adhesive chosen to bond the wood particles securely together: it must be of consistently high quality to insure dependable, uniform strength in the finished board.

Reichhold can fill all your regular and special glue needs from a practical range of urea-formaldehyde, phenol-formaldehyde, and polyvinyl acetate adhesives. When you do business with RCI you can also count on these invaluable extras . . . fast, reliable delivery all over the country and expert technical aid when you need it.

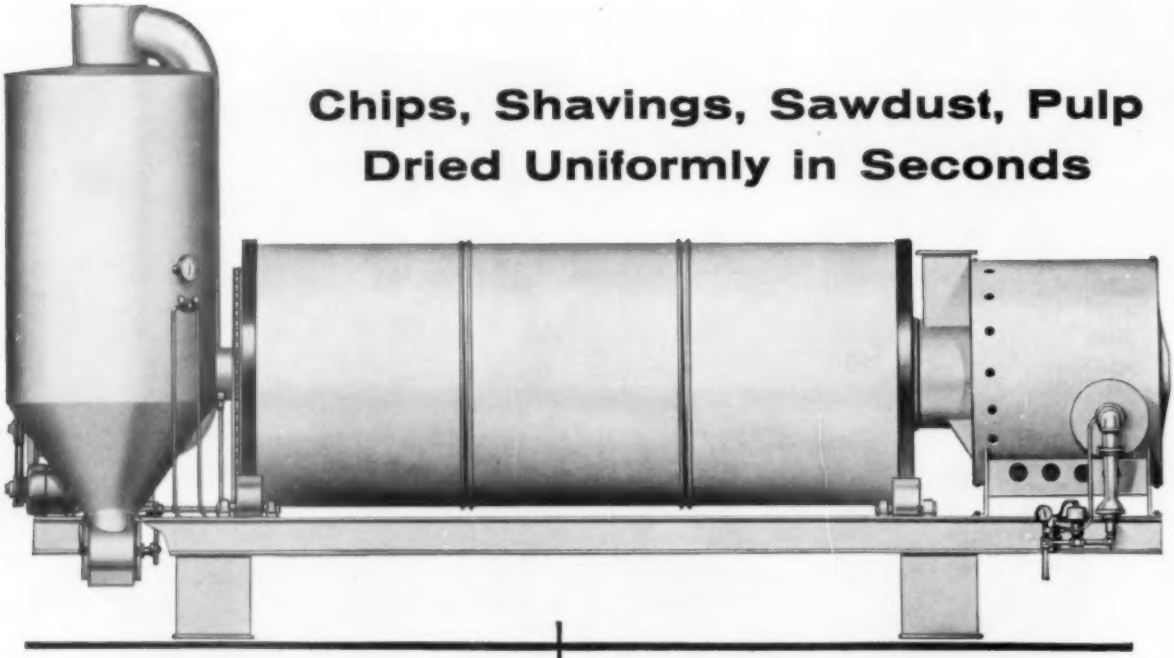
Creative Chemistry . . .
Your Partner in Progress

RCI **REICHHOLD**

REICHHOLD CHEMICALS, INC., RCI BUILDING, WHITE PLAINS, N.Y.

Synthetic Resins • Chemical Colors • Industrial Adhesives • Phenol • Hydrochloric Acid • Formaldehyde • Phthalic Anhydride • Maleic Anhydride
Ortho-Phenylphenol • Sodium Sulfite • Pentaerythritol • Pentachlorophenol • Sodium Pentachlorophenate • Sulfuric Acid • Methanol

Chips, Shavings, Sawdust, Pulp Dried Uniformly in Seconds



High production rate, uniform moisture, low operating costs — these are reasons why hundreds of plants use Heil dryers. They are reasons why you should investigate Heil dryers for your plant. Here are just a few of the proved features:

- Materials carried on a stream of hot air provide ideal exposure time for each particle based upon weight due to moisture content.
- The exclusive three-pass drum features an expanding cross-sectional area which provides three-stage drying in one machine.
- Compound flights on drums continuously shower the product into the hot air stream . . . assure ideal air activity in all drum areas . . . provide maximum drying capacity within a compact unit.
- Makes efficient use of radiant heat given off by center and intermediate cylinders.

MORE THAN 40 HEIL DRYERS in wood product plants

The following are representative:

- **Cascades Plywood Corporation, Lebanon, Ore.,** reduces moisture content of wood fiber from 50 percent (dry wt. basis) to 5 percent in 12 seconds.
- **Pope & Talbot, Oakridge, Ore.,** increased sales of their particle-board plant 16 percent through better utilization of wood residue. Two Heil Dryers are used.
- **Brownsville Particleboard and Associated Products, Inc., Brownsville, Ore.** — Heil Dryer plays an important part in putting "automation in practice," reduces moisture content of Douglas fir shavings to about 6 percent.

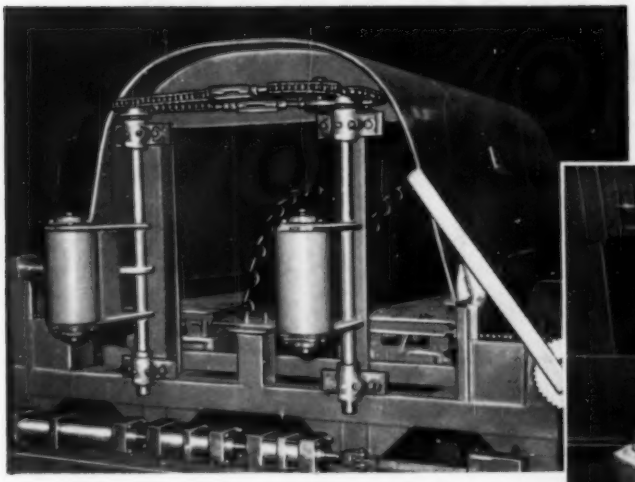
WRITE, WIRE OR CALL—

HEIL Quality PRODUCTS

THE HEIL CO.

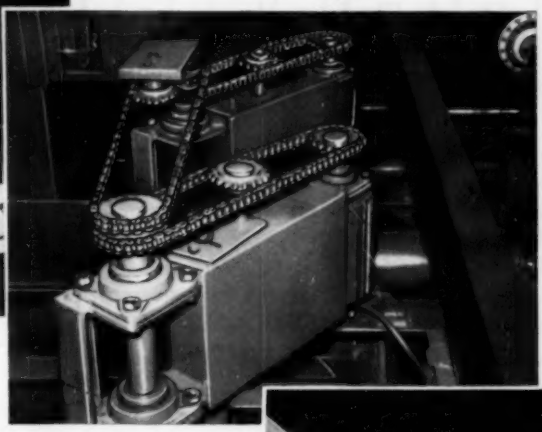
(Manufacturers of Ardrier Dehydrators for the Arnold Dryer Co.)

3000 West Montana Street
Milwaukee 1, Wisconsin



DIAMOND Roller Chains control rolls that center logs between circular saws on Salem Two-Saw Pole Mill.

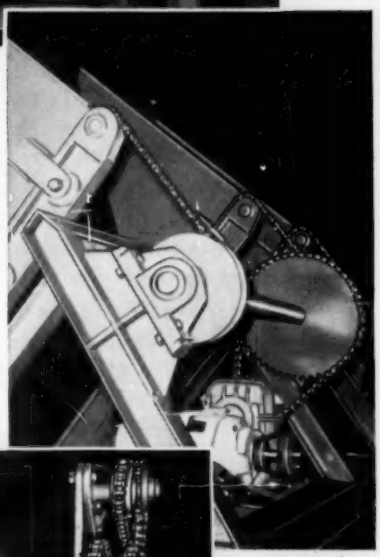
Salem Line Bar uses DIAMOND Roller Chains to drive feed rolls that speed lumber through resaw.



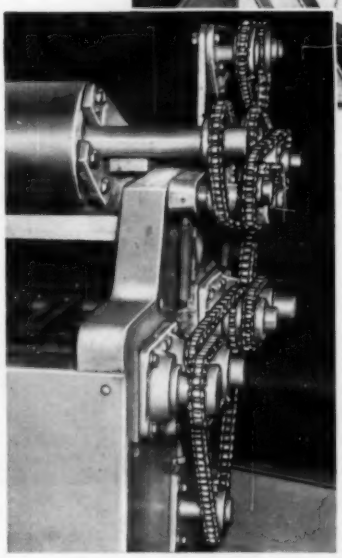
from pole mills
to planers

DIAMOND Roller Chains

drive SALEM Sawmill Equipment . . . insure dependable performance with minimum downtime . . .



From the timberlands to the oil fields, on farms, in industry, and on construction jobs the world over, DIAMOND Roller Chains have earned an unsurpassed 70-year reputation for quality . . . for reliability . . . for superior service. That's why Salem Equipment & Supply Company and other leading manufacturers specify DIAMOND Roller Chains for dependable power transmission. To keep your equipment in top operating condition, call your DIAMOND Distributor whenever you need replacement roller chain, sprockets, flexible couplings or conveyor chain. Look in the yellow pages under "Chains" or "Chains, Roller."



DIAMOND Roller Chains drive Salem Breakdown Hoist that transfers rough lumber from mill to planer table.

DIAMOND Roller Chains drive infeed, outfeed, and press rolls on Salem high-speed Edger.

DIAMOND CHAIN COMPANY, INC.
A Subsidiary of American Steel Foundries.
Dept. No. 647 • 402 Kentucky Avenue • Indianapolis 7, Indiana
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DIAMOND ROLLER CHAINS ®

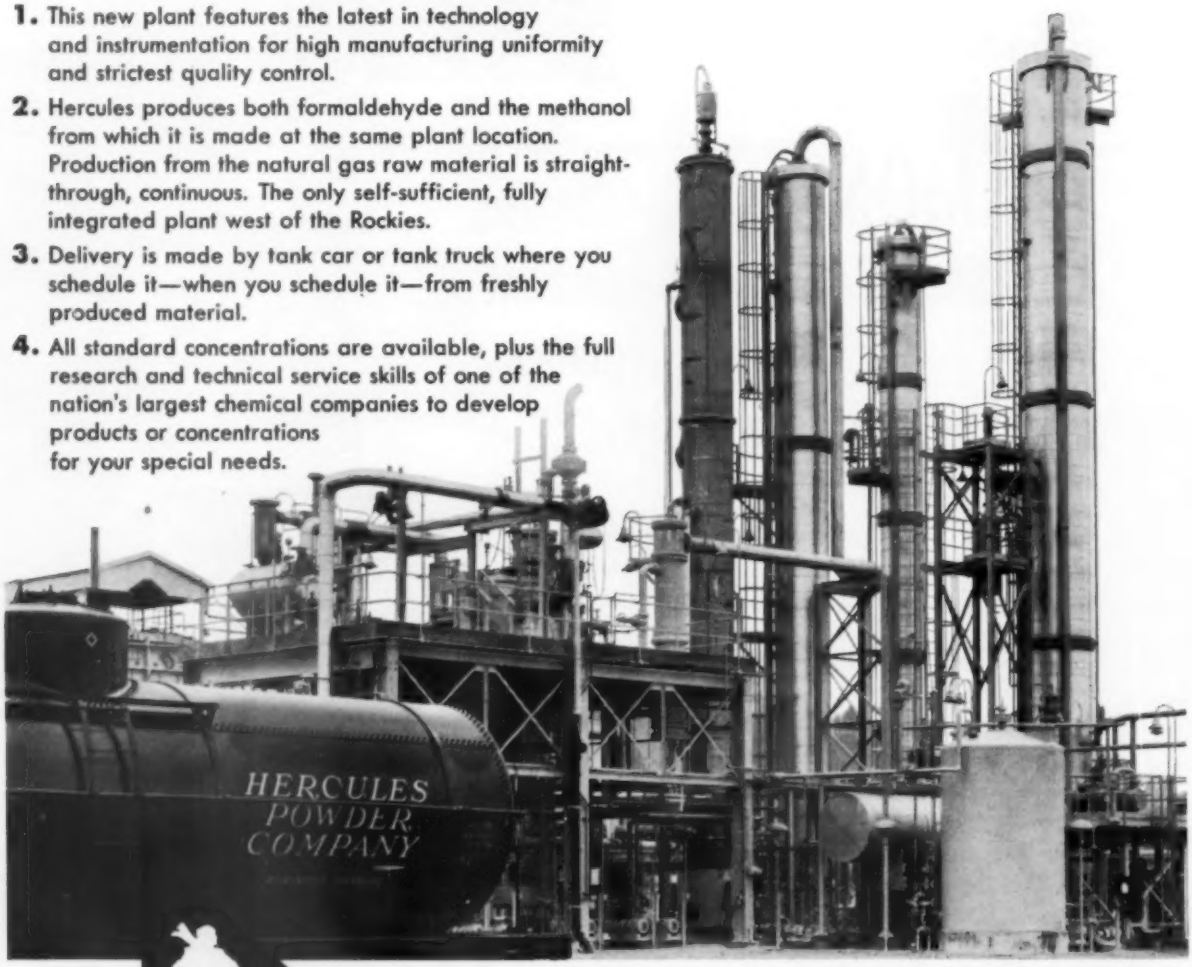
FROM THIS NEW PLANT ON SAN PABLO BAY... A RELIABLE SOURCE OF

FORMALDEHYDE

This fully integrated methanol-formaldehyde facility at Hercules, California, now joins the Louisiana, Missouri, plant. It is Hercules' second integrated manufacturing and shipping facility for formaldehyde.

And there are other good reasons for customer recognition of Hercules as a dependable supplier of formaldehyde:

1. This new plant features the latest in technology and instrumentation for high manufacturing uniformity and strictest quality control.
2. Hercules produces both formaldehyde and the methanol from which it is made at the same plant location. Production from the natural gas raw material is straight-through, continuous. The only self-sufficient, fully integrated plant west of the Rockies.
3. Delivery is made by tank car or tank truck where you schedule it—when you schedule it—from freshly produced material.
4. All standard concentrations are available, plus the full research and technical service skills of one of the nation's largest chemical companies to develop products or concentrations for your special needs.



For further information on how Hercules serves you, contact the nearest Hercules Sales Office or write:

Synthetics Department

HERCULES POWDER COMPANY

INCORPORATED

Hercules Tower, 910 Market Street, Wilmington 99, Delaware

SF61-1

SALES OFFICES: ATLANTA, BOSTON, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, HOUSTON, LOS ANGELES, NEW YORK, SAN FRANCISCO, WILMINGTON

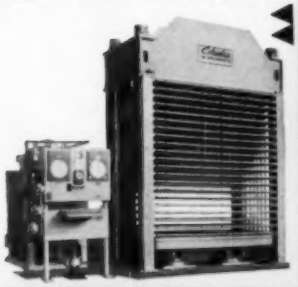
. . . for time and money saving production of

pick a

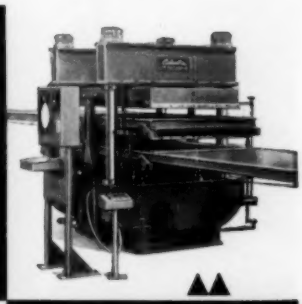
TIME-PROVED INDUSTRY-APPROVED

Columbia

HYDRAULIC PRESS



HOT PLATE PRESSES . . . 15 outstanding features for top production and quality, saving time and money. Rigid design, trouble free hydraulic system and honest rating guarantee dependable performance.
Request Bulletin HP-300.



COLD LAMINATING PRESSES . . . proved for low-cost operation. Available in a complete range of sizes and types; upstroke and downstroke models; pressures to 200 psi. Convertible to high frequency operation.
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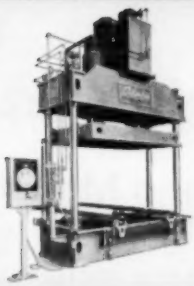
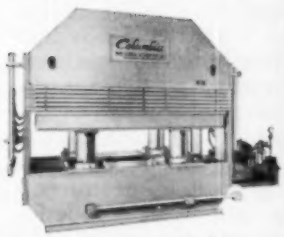
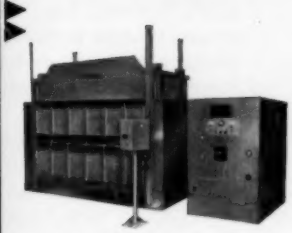


SHUTTLE PRESSES . . . designed and pioneered by Columbia to utilize labor to the fullest extent. Handlers discharge and reload one caul while load on other is under compression in the press.
Request Bulletin HP-400.



HIGH FREQUENCY PRESSES . . . double duty: cold laminating or with high frequency heating for fast production of large or small lots with low-cost, shop-made forms for better curved laminated panels.
Request Bulletin HP-300.



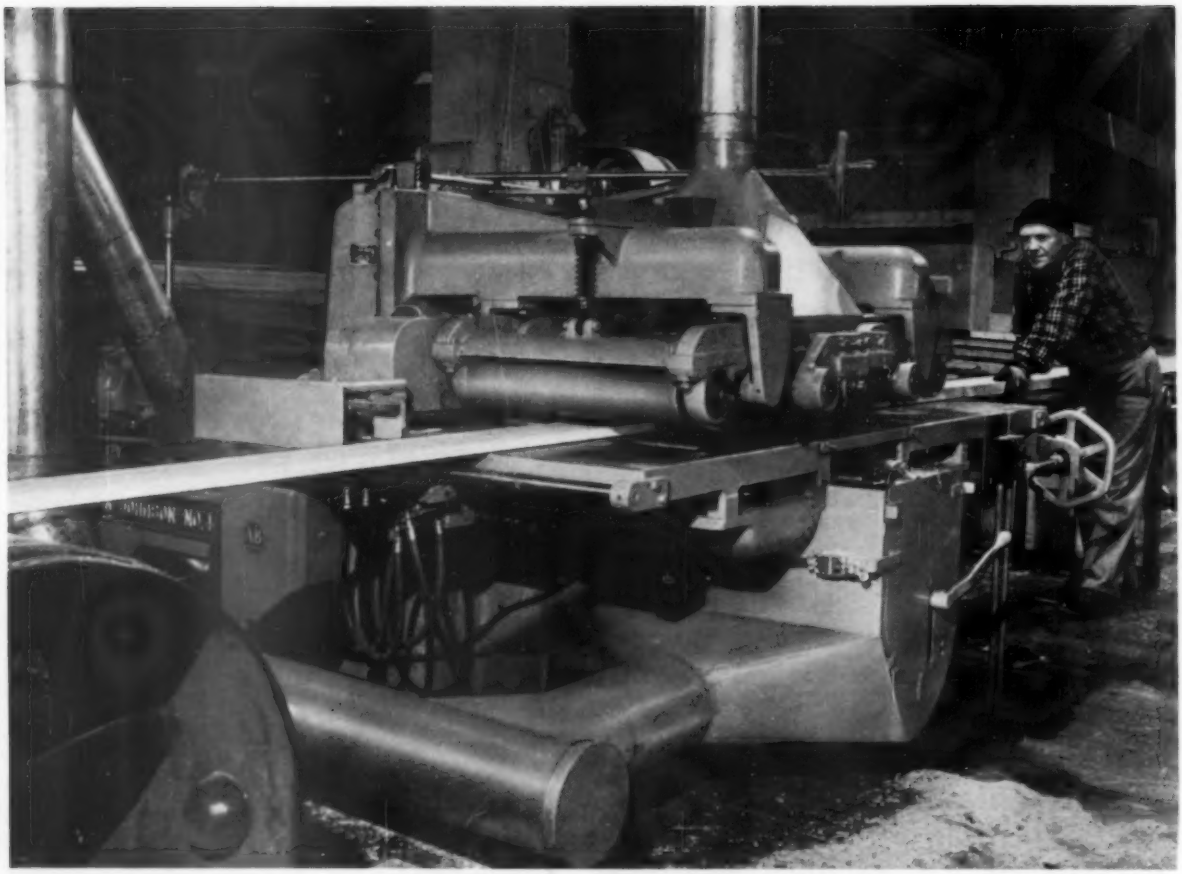
FLOOR TYPE PRESSES . . . offering one to five daylights and economy of installation and operation. Feature most advanced hydraulic and mechanical equipment. Available in end and side-loading models.
Request Bulletin HP-400.

Columbia Hot Plate, Cold Laminating and High Frequency Presses incorporate modern, proven features which assure production output, quality and efficiency with trouble-free performance. Their industry-wide acceptance is the result of many years of experience in design and manufacture of presses.

For detailed COLUMBIA literature, write:

The LODGE & SHIPLEY Company

3060 Colerain Ave., Cincinnati 25, Ohio



Mereen-Johnson **441-A SPLITTER**

Saves Money and Manpower at Potlatch Forests, Inc.

A new Mereen-Johnson 441-A Splitter has established impressive cost savings for Potlatch Forests, Inc., Coeur d'Alene, Idaho, because it has completely eliminated one re-planing process and the need of re-assorting for grade as done previously. P.F.I. has been able to reduce its force by four men as a result of the combined splitting and re-planing services the machine can perform.

Potlatch Forests, Inc., cuts logs from its own timber stand and ships them to the plant. Due to a 15 per cent average run of common grades, and an annual volume of 70-75,000,000 board feet, up-grading was necessary.

Utilizing the combination features of the M-J 441-A Splitter there is no necessity to operate a feeder, grader, planer and rip-saw.

With the 441-A Splitter the re-manufactured lumber can reach the final stage of production two days sooner than under the old method. The 441-A now eliminates those additional steps that were once a necessity.

The M-J 441-A Splitter permits Potlatch to up-grade by one or two grades. It eliminates a complete production step saving them money, manpower and time.

Write for information on the 441-A on your company letterhead.

MEREEN-JOHNSON MACHINE COMPANY
4401 LYNDALE AVENUE NORTH — MINNEAPOLIS 12, MINNESOTA

CUT-OFF SAWS • DOUBLE CUT-OFF SAWS • MULTIPLE CUT-OFF SAWS • TENONERS
GANG RIP SAWS • VENEER & PLYWOOD SIZERS & JOINTERS • RESAWS

SPEED SKIDDER

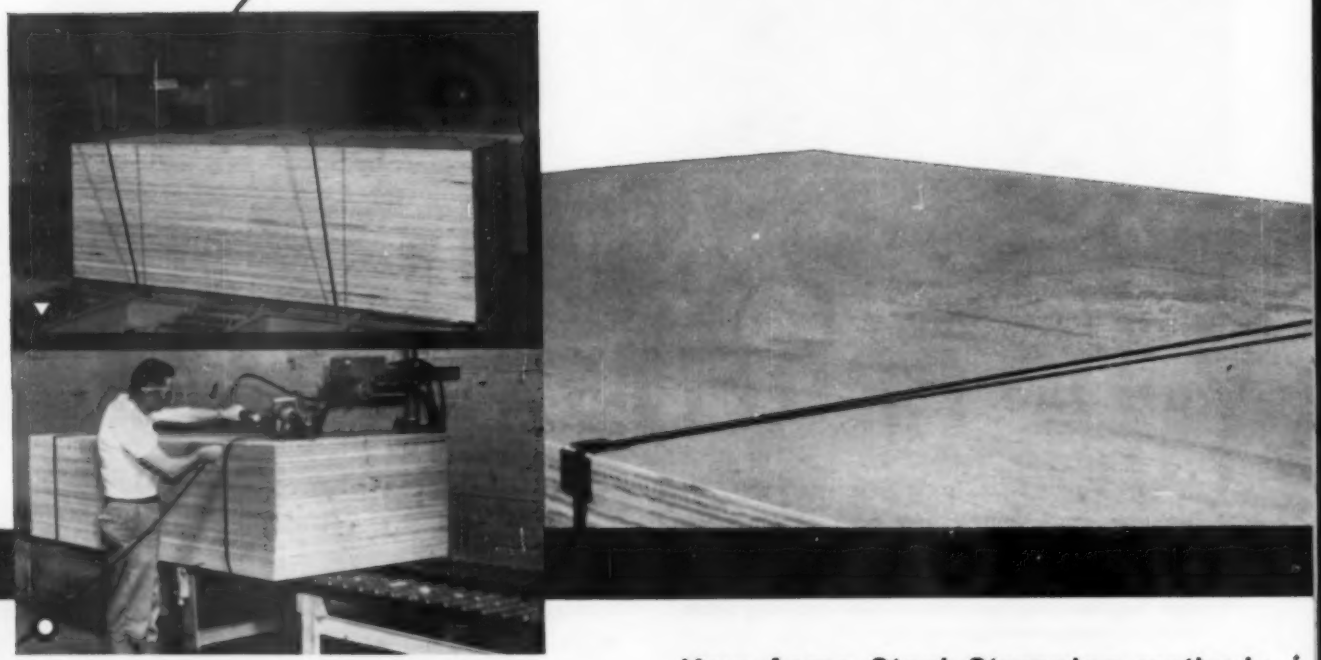
puts the PROFITS back in skidding

- No track maintenance; faster speeds cuts costs 75%
- Operates in any weather, extending logging season
- High flotation, low pressure, broad tread, nylon tires provide unusual traction over all ground conditions
- High log carrying position makes skidding easier and minimizes damage to logs
- Makes logging in scattered areas possible – even when skidding up to 5 miles
- Balanced weight distribution for logging
- Excellent operator visibility and ease of control
- Short wheelbase for greater maneuverability
- 2 wheel power steering (4 wheel power steering available)
- Special design, 4 wheel drive, heavy duty planetary logging axles
- Gasoline or Diesel power
- Heavy duty 12 speed power transmission line
- Extra heavy chassis frame gives longer life
- Protective steel plate belly pan

you can depend on PETTIBONE

PETTIBONE MULLIKEN CORPORATION
4700 WEST DIVISION STREET, CHICAGO 51, ILLINOIS

STRAP YOUR PLYWOOD for PROTECTION and PROFIT



▼ **DRAPE FEED METHOD**—The simplest solution to wrapping straps around plywood. Straps are fed from E33 Steelstrap Dispensers through overhead feed tubes. The operator pulls the straps from the overhead feed tubes and fastens them into gripping dogs welded onto the conveyor. As he pushes the stacked plywood into strapping position, the straps are automatically drawn around and under the unit. Straps are then inserted into a fully-powered A4 Pneumatic Steelstrapper. Through fingertip control, the strap is tensioned, sealed and cut.

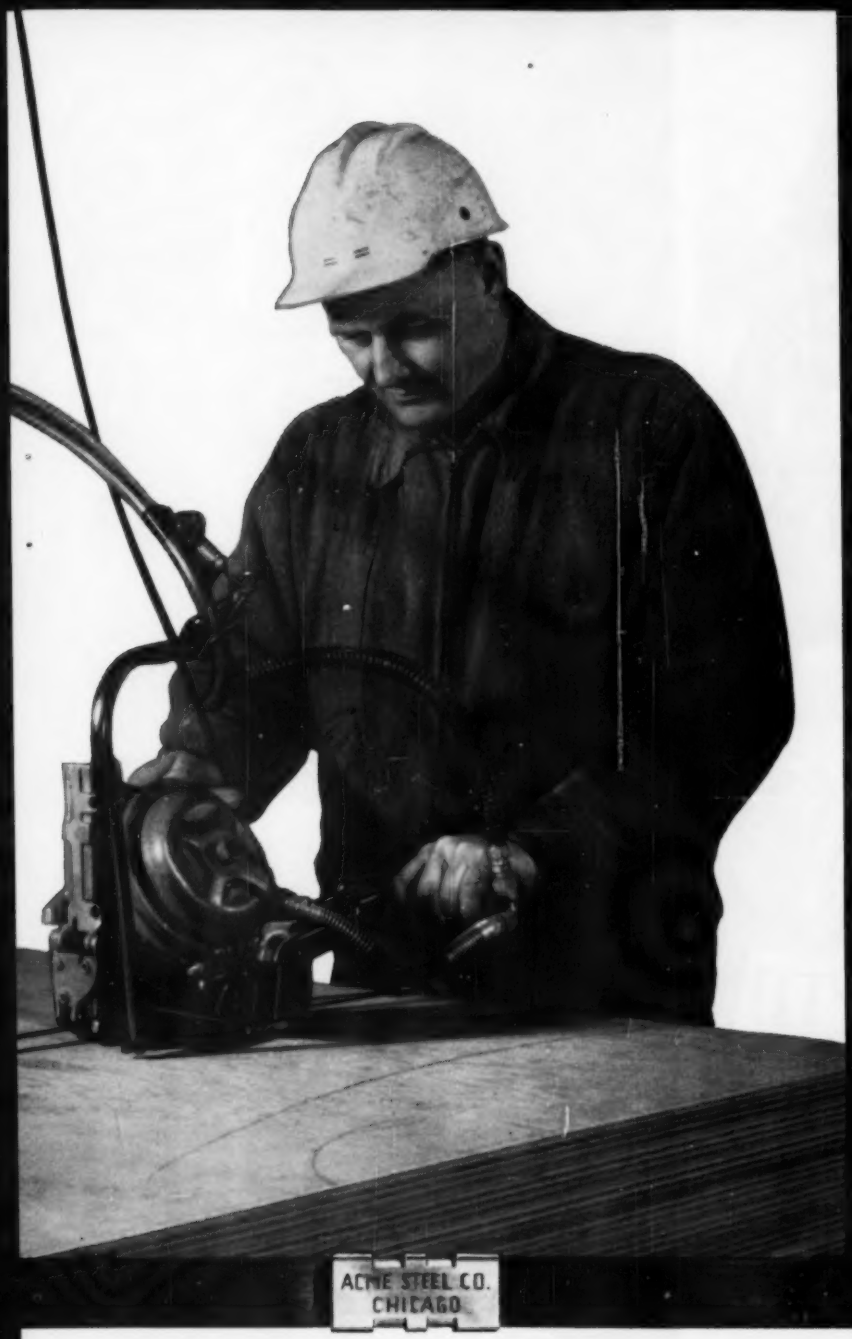
● **POWER STRAP FEED METHOD**—A fully-powered Acme Steel A4 Pneumatic Steelstrapper can be teamed with an E41 Power Strap Feed Unit for swift, effortless production line packaging. Strapping is automatically fed under the panels, through a track, directly to the operator. The Steelstrapper swings into position on the spring-loaded arm of a C-5 Tool Mount. The strap is then inserted into the Steelstrapper, which uniformly tensions, seals and cuts the strap through fingertip control.
The E41 Power Strap Feed Unit can also be used to strap pre-finished panels into protective packages. It's a complete one-man strapping station designed to fit easily into existing conveyor systems.

How Acme Steel Strapping methods

Though production and handling costs are at an all-time high, a fast-growing number of plywood producers are beating the profit squeeze. They unitize plywood panels into tight, neat packages with Acme Steel Strapping. As a result, they are promoting savings, safeguarding shipments all down the line—from mill, to dealer, to user. The strapping methods described at left, perfected by Acme Steel Company, provide the following advantages:

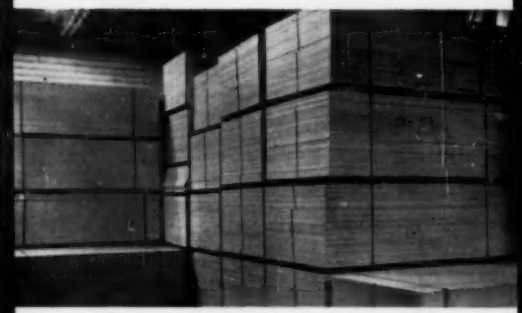
No shuffling or shifting—strapped packages stay put throughout handling and transit. Carloads braced with Acme Steel Strapping arrive in excellent condition. Result: no downgrading by receiver, greater profit per shipment.

At least 25% faster handling—mechanical equipment can



QUICKER CARLOADING—You save 25% or more in loading time with your mechanical handling equipment. Customers enjoy equal or greater savings in unloading and storage.

BETTER BRACING—Heavy Duty Acme Steel Strapping can keep loads shift-free with minimum labor and materials. At destination, loads are simply "snipped" free.



SIMPLIFIED STORAGE—Packaged panels speed tally and identification . . . expedite order make-up through mechanical handling. And they can be stacked higher, more compactly.

help hold the line against rising costs

be used more efficiently during loading, unloading and storage handling.

Store more in the same space—compact, square plywood packages can be stacked higher.

Speed inventory—strapped units can be counted quickly and easily, reducing chances of tally error.

Encourage large-lot orders—because standard units discourage small, broken-lot orders. They sell faster, too . . . damage-free merchandise is always more attractive.

Ask your Acme Idea Man, or return the coupon, for details on the packaging procedure and equipment that will fit *your* operation most profitably.

ACME STEEL IDEA LEADER IN **STRAPPING**

ACME STEEL COMPANY, Acme Steel Products Division
Dept. 000-00, 135th Street & Perry Avenue, Chicago 27, Illinois

Please send Plywood Strapping Bulletin, LBS-71

☐ Have Acme Idea Man call.

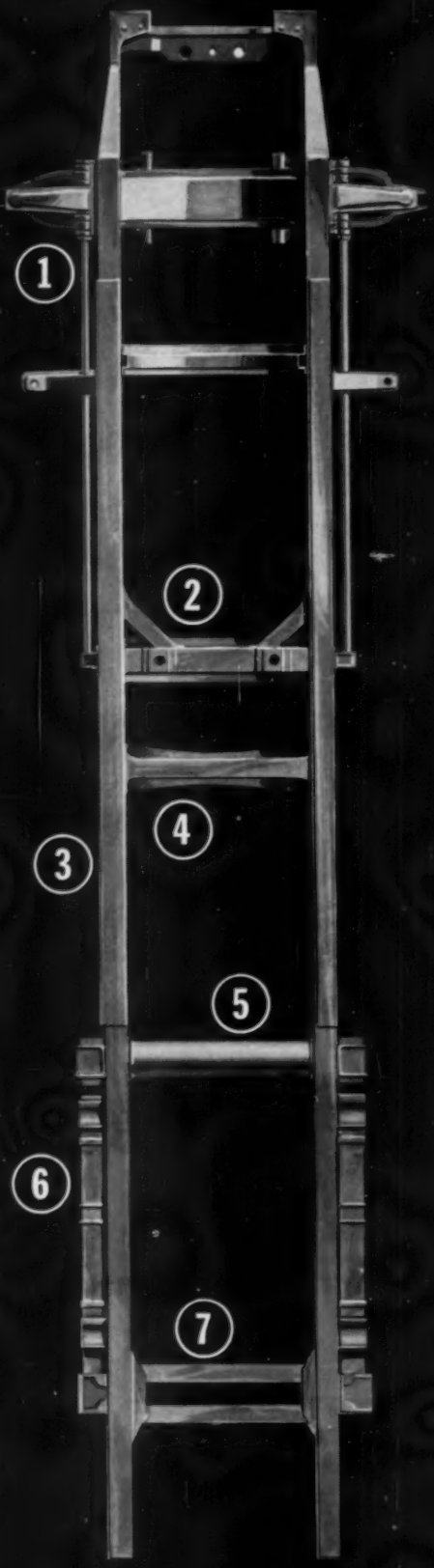
*Name*_____

*Title*_____

*Firm*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____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HERE'S BONUS BACKBONE BRAWN—CHEVY TRUCKS SPECIALLY EQUIPPED FOR EXTRA-SEVERE DUTY!

They're built to blaze trails lesser trucks can't travel—to bull their way through brutal back country with king-sized loads—to stand up to terrain that can turn ordinary trucks into scrap iron before their time. Chevrolet's new heavy-duty off-highway chassis equipment option is good news for off-road operators everywhere. Now you can get the profit-protecting advantages of years-ahead Independent Front Suspension ride combined with the extra chassis beef your kind of work demands. The tougher your task, the more you'll appreciate the strength and durability built into this one!

■ **EXTRA BEEF FOR BRUTAL DUTY:** That beaver emblem on the sides of Chevrolet's new extra-duty-equipped medium- and heavy-duty trucks will be showing up more and more where the jobs are toughest—where getting the work done demands performance beyond the normal call of duty. These Chevies look the same on the outside, but there's a big difference down deep. More than just an add-on or build-up package, Chevrolet's new off-road equipment option combines maximum-duty suspension components with a special-built frame that's engineered for all-out ruggedness in every detail. A frame with K-braced ladder-type construction that delivers extra torsional resilience to soak up brutal beatings.

Here's what you get: ❶ Heavy-duty 4,000-lb. torsion bars up front, anchored right at the frame K-brace crossmember for sturdy support. (Anchors are truss-rod-connected under the frame for an extra margin of strength.) ❷ Massive K-brace crossmember between the torsion bar anchors, specially designed for maximum structural rigidity and fabricated of high-tensile-strength steel. ❸ Extra-heavy side rails, of full quarter-inch stock, with full-length L-plate reinforcements. ❹ Heavy-gauge alligator-jaw crossmembers in frame midsection that combine high strength with give-and-take resilience. ❺ A massive tubular crossmember, anchored in extra-heavy cast steel brackets at the rear spring front hangers. ❻ Maximum-duty 11,500-lb. rear springs of standard variable-rate design, plus the extra margin of 2,000-lb. auxiliary springs. And ❼ a massive double channel crossmember at the spring rear hangers heavily gusseted fore and aft—the finishing touch of rock-ribbed ruggedness between roughest roads and heaviest loads.

If yours is a truck-killing job, this new option is tailor-made for you. You can get it on any of four medium- and heavy-duty models to match your needs best, and you'll be surprised at how little it costs. See your Chevrolet dealer right away for full details. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Availability: Heavy-Duty Off-Road Chassis Equipment

Model	Wheelbase	Cab-to-Axle	Max. GVW	Front Suspension Capacity	Rear Axle Capacity
C6303	157″	84″	19,500 lbs.	5,000 lbs.	15,000 lbs.
C6503	175″	102″	19,500 lbs.	5,000 lbs.	15,000 lbs.
C7303	157″	84″	23,000 lbs.	7,000 lbs.	16,000 lbs.
C7503	175″	102″	23,000 lbs.	7,000 lbs.	16,000 lbs.

1961 CHEVROLET STURDI-BILT TRUCKS

CHEVROLET

According to your "likes"...

I like the "H-130"
It's the strongest transfer chain I could find...handles the heaviest loads...wears longer because it's so ruggedly built.

I like the "H-500"
Detachable links can be attached or detached in a hurry without tools. Makes link replacement and chain assembly a fast, easy job.

I like the "H-138"
Flat roof design prevents scoring our finished lumber... and like all Moline Chains, it's really rugged.

I like the NEW "C-55"
Low price was a big factor in our selection. We use both the flat roof and the peaked roof chains to move lumber, boxwood and finished crates and boxes.

I like the "H-78"
With big load capacity and choice of peaked or flat roof design, it's ideal for transferring rough or finished lumber . . . flexible and strong.

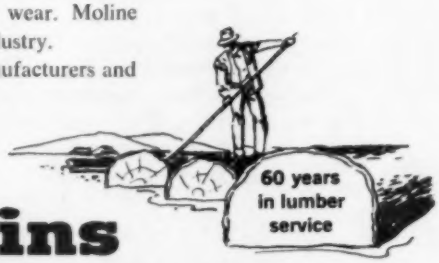
choose Moline transfer chains

Take your choice... flat or peaked roof design, riveted or detachable construction, short or long pitch. There's a Moline Transfer Chain to meet every job requirement from green chain to moving finished lumber.

Your choice is always right when you specify Moline Chain. Extra strength is built into every link to stand the heavy loads of sawmill transfer table service. Factory "triple-testing" assures uniform high quality, accurate dimensions and longer wear. Moline superiority has been proved in over sixty years of service to the lumber industry.

Moline chains are interchangeable with "standard" chains of other manufacturers and are available in Moline Malleable or Promal.

Chains for every sawmill job... from log-handling to sorting finished lumber. Write for illustrated literature or see your Moline distributor today!



Moline Chains

MOLINE MALLEABLE IRON CO. St. Charles, Illinois
Specializing in the manufacture of chain.

There's a Timesavers Speedbelt® Sander For Every Sanding and Finishing Job!

MODEL TOP
Heavy Duty

TIMESAVERS SANDERS, INC.

Pioneer and leader in wide abrasive belt sanding machines

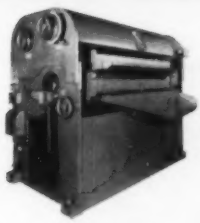
ANNOUNCES
THE APPOINTMENT OF

E. V. PRENTICE CO., INC.

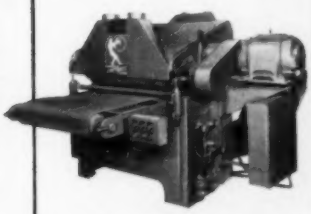
2303 N. Randolph Ave.
Portland 17, Oregon

as distributor for

TIMESAVERS
SPEEDBELT®
SANDERS



MODEL BH
Super Heavy Duty



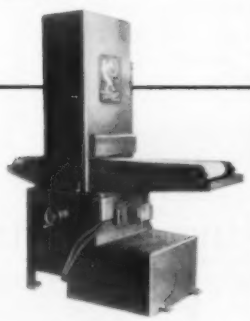
MODEL TOP
Standard Duty

The E. V. Prentice Co., Inc. will handle all sales and service of Timesavers equipment for the Lumber, Woodworking and Forest Products Industries throughout the Pacific Northwest. (No. California, Oregon, Washington, Montana and Idaho.)

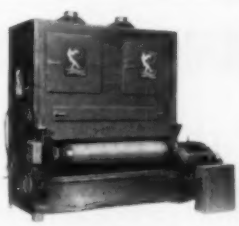
A Timesavers Speedbelt Sander is installed at the E. V. Prentice Company's headquarters in Portland and is available for demonstration and sample tests.

Timesavers Speedbelt Sanders are manufactured under one or more of the following U. S. Patents: 2,813,352; 2,860,454; 2,876,600; 2,934,863; 2,958,989 with other patents pending.

MODEL TBS
Heavy Duty



MODEL TOP
Vertical Head
Wet Grinding



MODEL TOP
Vertical Head
Adjustable Bed

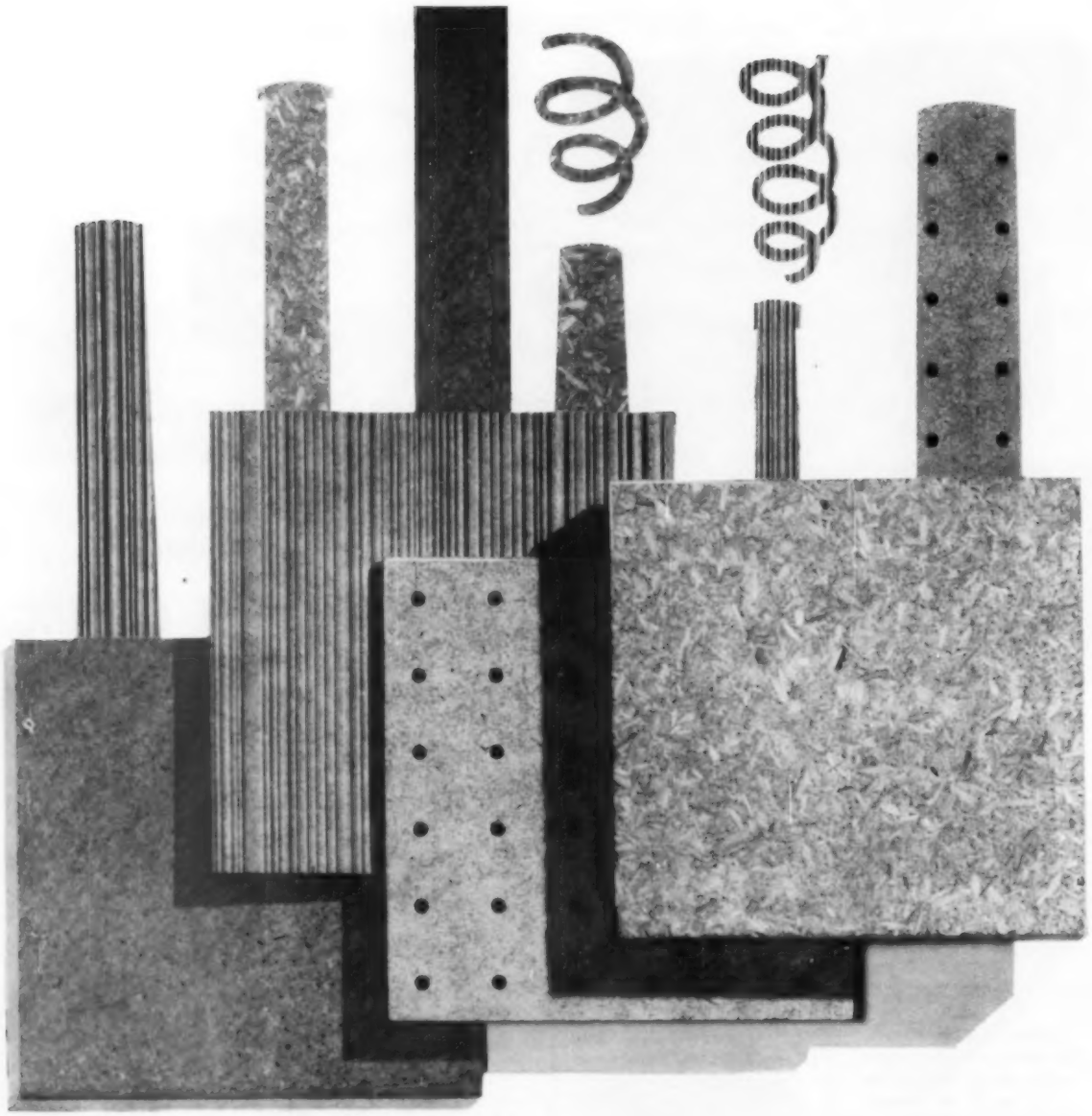
MODEL SPL
Heavy Duty

SEND SAMPLES OF YOUR JOB . . .

and full details of your operation. Our engineers will be pleased to arrange for a test run of your materials and recommend the proper Timesavers Speedbelt Sander Model to meet your needs. No obligation, of course.

WRITE FOR LITERATURE TODAY!

TIMESAVERS SANDERS, INC. • 5270 HANSON CT. • MINNEAPOLIS 22, MINN.



MONSANTO: basic supplier of the forest products industry

Monsanto supplies the Forest Products Industry with melamine, urea and phenolic resins in either liquid or powdered form for the manufacture of particle and hardboard. In this complete line there is a resin specifically tailored to meet your processing requirements. To take advantage of Monsanto's pioneering in research and development contact: Monsanto Chemical Company, Plastics Division, 911 Western Avenue, Seattle 4, Washington. MAin 2-4023.

Monsanto

IT'S BOUND TO BE BETTER WITH A USS STEEL STRAPPING SURVEY

$138.50

Think how many new customers you could add if you saved each one $138.50 per carload of lumber!

When lumber is strapped at the mill, you pass tremendous savings on to your customers. For instance, when lumber arrives in strapped, unitized packages, they can unload it with a fork-lift truck rather than manually, and save $51.50 a carload. Studies show that receiving, in-yard handling, storage, and shipping *strapped* lumber can save dealers up to $138.50 a carload.

If your customers don't already ask for strapped lumber, they soon will. Here's why: U. S. Steel Supply has come up with a 3-point strapping program which guarantees to cut handling costs in retail lumberyards. It's called "Survey, Standardize, and Save." Here's how it works: U. S. Steel Supply packaging engineers go into the yards and make a complete, *free* survey. They recommend, specify, and even conduct actual over-the-road tests on lumber shipments bound by steel strapping. They show precisely how dealers save in every phase of their handling operation. This same cost-saving program was recently displayed at the NRLDA Building Materials Exposition in San Francisco.

Strapped lumber will not only bring you new business—it won't cost you anything. U. S. Steel Supply will show you how it saves enough in your own operation to offset your investment in strapping itself. To help you cash in on this plus business, you'll receive free folders which pictorialize the lumberyard cost savings. Distribute them to your customers and prospects. They'll be imprinted with your name and show that you're a mill that supplies strapped, unitized lumber. For complete information, send the coupon.

U. S. Steel Supply
Division of
United States Steel

USS
TRADEMARK

U. S. Steel Supply, U. S. Steel Corporation
208 South LaSalle Street, Chicago 4, Illinois

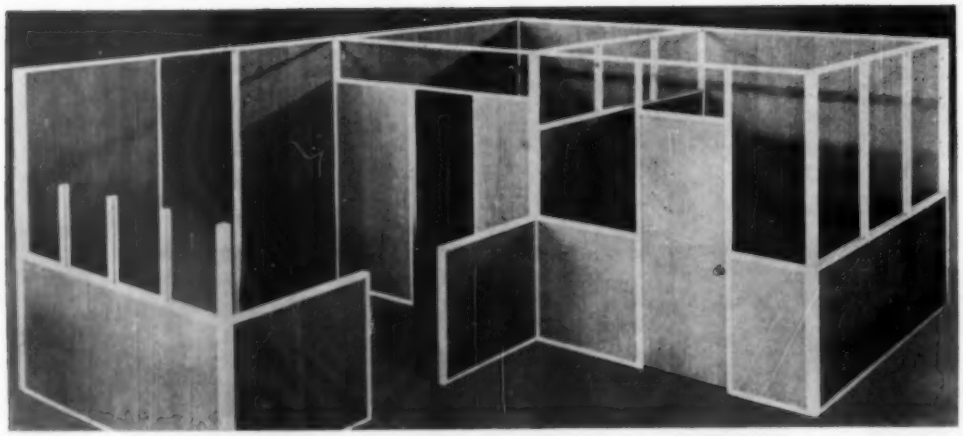
☐ Please send me all the details on this cost-saving strapping program—"Survey, Standardize, and Save."

Name_____

Company_____

Address_____

City_____ Zone_____ State_____



A System for Conquering Inner Space

Here is a prefabricated component using insulation board as the basic product, but combining with it either hardboard or plywood faces, that is opening markets for Simpson Timber Co.

If insulation board can be used for ceilings and as sheathing on load bearing walls—and if people also like and want real woods or hardboard, why not combine these into an innerwall, fast assembly system for homes, commercial or institutional application? It was on this premise that Simpson Timber Co., Seattle, Wash., began development of a product that is now called *Easy-Wall* and was successfully launched this past fall.

Actually, the present interior non-supporting Easy-Wall is the "first stage" of the "rocket" in Simpson's development plans for this product. The eventual development will include loadbearing walls as well in the component fabricated sections.

The product is a free-standing partition, manufactured in 2'x8' and 2'x10' panels, 1⅜" thick and faced on both sides with vinyl protected wood grained hardboard or with plywood. A thick, rigid core insulating board provides a completely finished wall with high heat and sound insulation value and exceptional strength. Its advantages as a "space saver" are evident since the thickness is much less than the standard 3⅝" wall construction. Engineers and sales departments both foresee a readily public acceptance, especially among small home builders because of both cost and space saving features.

In addition to the easy fast erection of the partition panels, matching wall panels ⅝" thick are available with an insulating board backing faced with matching prefinished hardboard or plywood. Matching doors of the same product come in 6'8" or 7'11" ceiling height. Seven precision machined erection components complete the system. The interlocking components are factory-painted in a light beige, complimentary to prefinishes and are fabricated from selected, kiln-dried wood. They include utility plate; corner post; glazing post; full, half and door stops, and panel mould. Wood grained, vinyl finished hardboards are presently supplied in either cherry mocha (a dark brown) or cherry mist (a silvery grey). Partitions easily slide in place, joined with ½" x 1⅜" x 8' or 10' plywood splines. Splines and plates are packaged with the partitions.

The company is taking two approaches to marketing: To the do-it-yourself market through dealers and through acoustical contractors for either commercial, industrial or home installation. At present, the do-it-yourselfer can install it at about the same or equivalent cost of a standard wall put in place by a carpenter but in much less time. Its ease of installation makes it attractive. It is presently gaining ready acceptance as office partitioning and for schools and churches, where it will go up fast, providing an attractive appearance and acts as an effective sound transmission barrier.

Promotional aids include dealer displays and a 20-minute movie called "Saturday Miracle," to create customer interest at the dealer level. The product is also being featured in all Simpson product advertising.

Showing how Easy-Wall partition quickly slides into place between ½" and 1⅜" plywood plates. Rigid plywood splines, ½" x 1⅜" joining planks and molding.

ANNOUNCING...

Rex UNI-BARREL Drag Chain

increased stamina for Drag Conveyor Service

Welded, all-steel, sturdy Uni-Barrel design

Increased strength to handle unexpected overloads and shock—bonus wear-resistance to stay on the job longer—these were the objectives in developing the new Rex Uni-Barrel Drag Chain for the pulp and paper industries.

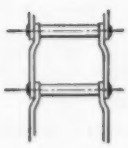
Now, after extensive research and on-the-job testing, this new Rex Uni-Barrel Drag Chain is ready to give you long life under the toughest service conditions!

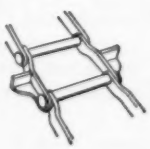
Just a glance tells you why this new chain introduces new efficiency and new freedom from down time to pulp and paper mills.

RUGGED REX UNI-BARREL DESIGN. The Rex Uni-Barrel is formed from heavy seamless steel tubing. This provides extra strength, not only strength from basic tube shape but also from dimensional accuracy which distributes strength and wear-resistance equally throughout the barrel.

Abrasion resistant. Steel construction assures maximum strength and wear-resistance throughout. High-strength steel not only gives high load-carrying capacity, but it is also easy to weld, making field modifications and repairs fast and simple. The weld is sound and uniform throughout the chain. This assures an accurate balance of stamina within components as well as in the weld between side bars and Uni-Barrels.

Three-diameter pins of abrasion-resistant, heat-treated steel make assembly and disassembly easy, assures maximum strength and wear life.





Press-fits and mechanical locks eliminate wear in outer side bar holes—reducing wear throughout. Pins, press-fitted and mechanically locked into side bars, confine wear to large bearing area in the Uni-Barrel—eliminate fiddling- and flexing-wear in outer pitch holes.

Precise pitch control minimizes pin and side bar stress; side bar holes are accurately pierced and positioned. This, plus the dimensional accuracy of Uni-Barrel design, assures equal load distribution over every link.

Uni-Barrel face is coined for efficient carrying; Rex Uni-Barrel is shaped to hug trough—offsetting tendency to override conveyed materials.

Attachments easy to install. Since the side bar welds easily and is stronger, attachments are easy to put on and they stay put. No special welding techniques are required.

Turnover design allows chain to be turned over for added service life.

Fully replaces cast and combination mill chains —no need to change sprockets or troughs.

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How Board Manufacturers Evaluate Their Business--See Future Outlook

Here is how some of the leaders in particleboard, hardboard and insulation board industries size up their industry's status and its most urgent needs today — and what should be done about them. Here is something of what may be expected by way of future developments.

The complex of product characteristics, applications, prices, competition, marketing efficiency and new manufacturing developments, all contribute to the problems of the manufactured board products industries. It is the recognition of these problems and the positive action taken to solve them that open the way toward opportunities of profitable growth.

In all three products, particleboards, hardboards and insulation boards, the problems related to application, determining the logical market for each product, as indicated by its quality and price, still stand out as a major consideration for marketing. The logical market for a given board product would be resolved by performance in-use, cost-price-profit relationship and potential volume, as developed by users and promoted by manufacturer.

PARTICLEBOARD INDUSTRY

Most immediate problem is its overproduction without market development. Being a new industry with many types of board products, neither the consumer nor the manufacturer know its market scope and production runs ahead of the demand.

This indicates that a primary need is for promotion and educational information to gain broader consumer acceptance and an urgency for trained salesmen who can effectively interpret customer requirements. This must be followed with improved physical properties of the boards and with plant quality control to assure the customer he will get what he expects.

The first quality standards for production have been established by the new National Particleboard Association, and this is essential to stimulate consumption and market growth. Though standards are complicated by many different manufacturing processes, and by the fact that boards are finding increasing numbers of uses requiring various characteristics, makes such standards even more essential.

The National Particleboard Association will be as effective as its members allow. In addition to setting standards, it is evident that there is need for it to become an aggressive and effective force for industry growth.

Immediate developments in particleboard will lie in quality improvement and broader use for the construction industry. An exterior grade certainly should play an important role in this respect as well as for specialty uses. Much research is being conducted on binder improvements. The present trend toward cut-to-size will probably continue to supplement the "bread and butter" basic panels.

The particleboard industry is still in its infancy with the usual hazards and growing pains of such an industry. However, all look forward to its rather fast, widespread growth. Construction uses for particleboard are expected to have rapid development within the next 5 years. Low density board will play an important part in this growth. Both filling and printing of surfaces will move ahead rapidly and a market is showing up for crossbanding of furniture for very thin boards. With improved quality properties and surfaces, industrial uses will increase as a major outlet.

Many believe that particleboard will replace fir plywood in many applications. Floor underlayment, specifically, will become general in use and boards will serve as substratum for overlays of many types where wood and plastic surfaced material is to be used. Today's markets for furniture, case goods, cabinetry are expected to grow.

In the meantime, the industry has its work cut out in improving its image in the market place and by improved selling techniques to get the right product in the right end use. The present status is one of growth, with new plants, increased capacity, increasing production and product development being carried out simultaneously.

THE HARDBOARD INDUSTRY

If the hardboard industry continues to improve quality, reduce costs and effect nationwide distribution with customer service, it is well on its way to solving a major problem—that of competition with imports, so think many manufacturers.

It is presently hardpressed by about

ROUND TABLE PARTICIPANTS

Gene C. Brewer
President
U. S. Plywood Corp.

J. D. Leland
Vice-President
International Paper

John L. Aram
Vice-President
Weyerhaeuser Co.

Jack Wetherby
Merchandising Mgr.
Simpson Timber Co.

25% overproduction and more specialty products and applications must be found to improve the market outlets.

The present developments in prefinished, wood-grain printing and plastic laminating have only been scratched. This is a product that must be both sold and evaluated as a basic material and not as a substitute product.

In light of present developments, it is evident that oil tempering may be on the way out. Additives available and in the development stages, will produce tempered specifications for a standard board. These new products and the larger market opening for thin crossbanding for the furniture industries, could quickly reduce any overproduction today.

Hardboard producers believe that they must continually accept overproduction as a challenge to open new markets, rather than let it create a depressed market and reduce sales. Main goals must be to improve markets and to find new ones.

During the next five years ahead, light construction, furniture, automobiles and a wide diversity of minor markets such as displays, signs, toys and other specialty uses, will continue to grow rapidly. Development of component panels and new building methods will also expand markets if the industry prepares ahead to meet them. It is a growth industry, and its products are continuing to find "best-use" applications and producers continue to come up with new faces, and promote its uses in the more acceptable forms achieved during the past 7 or 8 years.

INSULATION BOARDS

Insulation board producers have generally been beset with many of the same difficulties of other panel manufacturers. Recent increases in production capacity has been followed by a tendency of a breakdown of the traditional distribution system as adequate distribution becomes more difficult to obtain.

This Armco Building, used for lumber storage and processing, was erected by the owner and a crew of his men.

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ARMCO Drainage & Metal Products

ROUND TABLE PARTICIPANTS

Melvin F. Cerruti
Vice-President
National Gypsum Co.

Elmon T. Gray
President
Gray Products Co. Inc.

Through the Insulation Board Institute, the industry is attempting to help solve the problem through obtaining broader use for the traditional materials and increased promotion of sheathing, roof-insulation and acoustical materials.

(Continued on next page)

Other Participants

George A. Pope, Jr. President, Pope & Talbot, Inc.
J. R. Hahn, Sales Mgr., Bowater Board Co.
John Colucci, Jr., Pres., John Colucci, Jr., Inc.
Walter E. Hoadley, Vice-pres. Armstrong Cork Co.
E. P. Brown, Jr., Sls. Mgr., Ampac Hardboard Co.

INDUSTRY REPORT

(Continued from page 61)

Important developments are such new products as vinyl surfaced ceiling products offering thermal-acoustical value, plus washability; an invasion of the roof sheathing markets with a new high value product and exterior wall and roof components. These will incorporate wood-fibre sheathing with foam plastic and exterior skins of asbestos-cement, aluminum, hardboard, plywood and other products. There is a growing market for such components that will reduce costs and expedite construction.

Today's significant developments include the combining of wood-fibre with mineral-fibre to obtain noncombustible and time-rated ceiling products. In the next few years, the important break-through in fire resistance will provide greater acceptance as an interior finish material for commercial and industrial buildings.

It is fundamental that to keep abreast of competition from other materials, the industry must accelerate its pace in research and development. That the insulation producers have made important use of market information, is well illustrated in the fact that approximately half of the ceiling tiles produced today were unheard of 10 years ago. Yet the urgency for more market and product research continues as competitive materials grow.

Probably the most critical shortage in American industry today is ideas to create products, service and methods. Incentives to spark greater creativity from all people in all areas must be strengthened. We should ask ourselves "what is each of us doing to strengthen our way of life, foster substainable growth and add employment opportunities."

DESPATCH PRECISION AIDS 350% BOOST IN PLYWOOD OUTPUT

Quality control possible with Despatch ovens has enabled a nationally-known manufacturer of plywood panels to increase production 350% in only four years.

Plywall Products Company of Ft. Wayne, Ind., and Corona, Calif., uses Despatch ovens for two separate, critical steps in manufacture of its quality Poly-Clad Philippine mahogany plywood panels. Result has been panels of such beauty and durability sales have soared.

Despatch engineers can provide you with equipment that will brighten your sales and production picture too. Let us prove it. Send *today*! for free bulletin 100 HN

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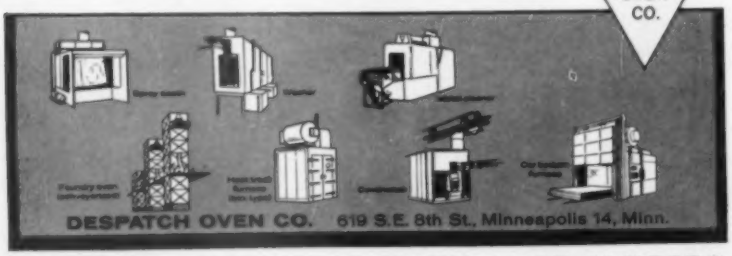


DESPATCH—INDUSTRY LEADERS FOR 58 YEARS

DFPA Officers Elected Predict Sales Up in 1961

At the 25th Annual meeting of Douglas Fir Plywood Association at Gearhart, Ore., in June, John Martinson, vice-president and general manager of Puget Sound Plywood, Inc., Tacoma, Wash., was elected president for a 2-year term. He succeeds Henry Bacon, Jr., executive vice-president of Simpson Timber Co., Seattle, Wash.

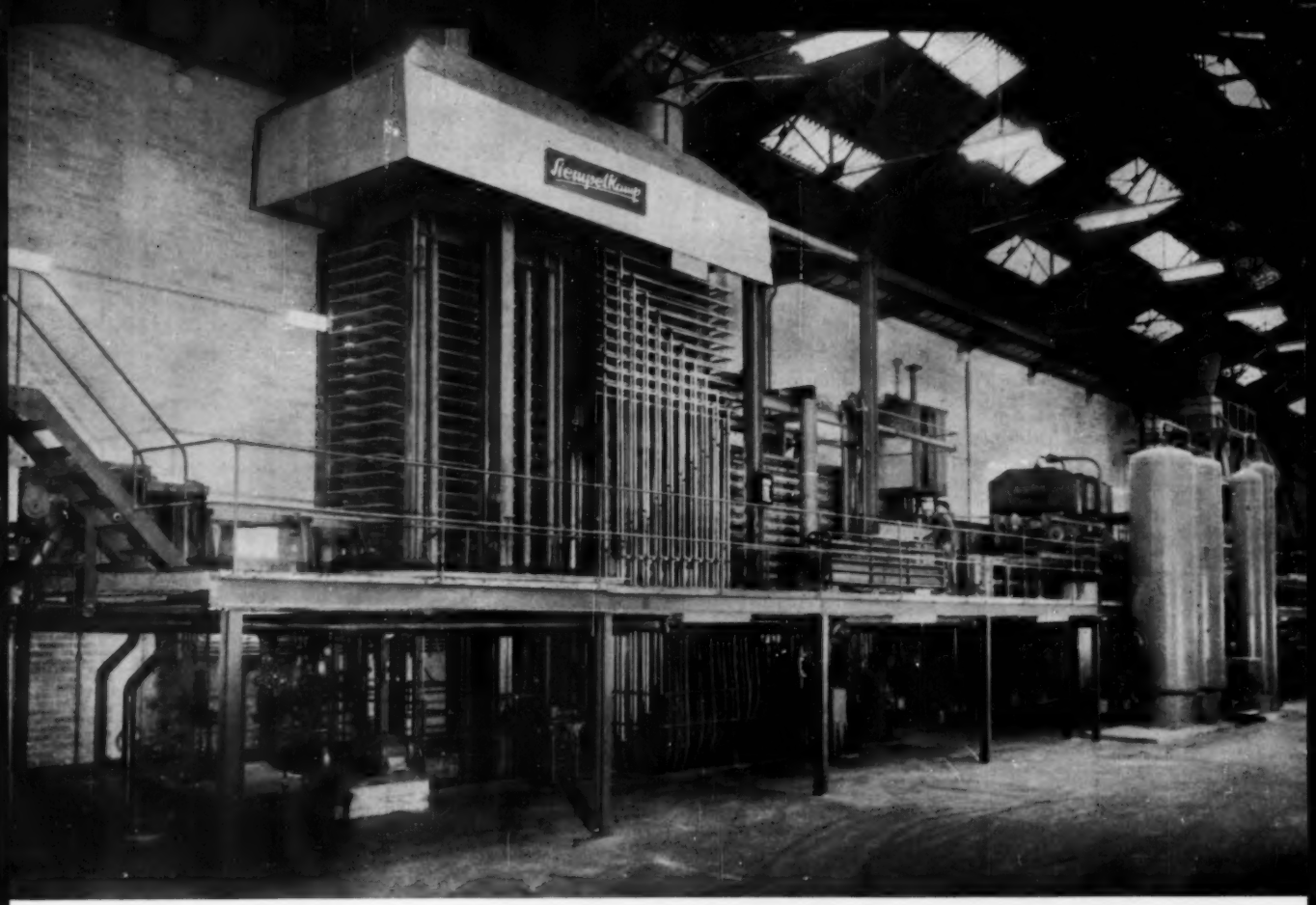
Named vice-president of DFPA was Jackson Beaman, president and sales manager of Southern Oregon Plywood, Inc., Grants Pass, Ore. In his president's report, retiring president Bacon warned about excess production, but predicted that plywood producers would sell 8.1 billion sq. ft. in 1961. There will be still 2 billion feet of capacity above market's ability to absorb plywood, he stated.

Something To Watch

Recently, Cascade Fiber Co., Eugene, Ore., purchased a plant site for their new particleboard plant. In formation here is probably one of the most important steps taken by smaller to medium sized mills in the history of the industry. A group of mill operators in Eugene, Ore., have jointly organized Cascade Fiber Co., in probably the first joint effort of consequence within the industry, under direction of Eliot Jenkins, formerly president of Booth-Kelly Lumber Co., of Springfield, Ore.

New National Forest Symbol

Five loops in the shape of a tree for the central element of a new symbol for National Forests. The five loops signify the five resources of the National Forests—water, wood, wildlife, forage and recreation. The symbol is a means of explaining the management principle applied on National Forests as directed by Congress under the Multiple Use Act of June 1960.



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An approach to

Particleboard Standards

By: RONALD G. FRASHOUR, Ass't Mgr.
Pacqua Div., Pacific Plywood Co., Dillard, Ore.

The wood particleboard industry has grown from a virtually unknown product as late as 1950 to a national industry in excess of 50 plants within the United States. Starting as "captive" operations, today the greater percentage is offered on the open market. Producing plants generally, are located in two divergent areas, on the West Coast and in the Eastern one-third of U. S.

Ron Frashour, right, and William Cooke, manager of Pacqua Div., Pacific Plywood Co., discuss particleboard standards related to general and specific products.

Board construction from the raw material used takes many forms ranging from homogenous flakes, particles, shavings and granules to combinations of each.

Physical properties vary with the type of construction; i.e. flakeboards usually have high blending strength while splinter or shaving-type have high internal strength, and granule boards achieve hardness, high density and exceptional machinability.

Each type of product has sought to utilize its specific physical property excellence without thought of standardization or planned market development as a unified industry.

Competition between products has caused an overlap in market areas. The ultimate customer is understandably confused by the maze of claims made by the numerous and varied products. An unhealthy situation arose when excess production or low-grade material from a plant producing for a specific market area dumped their products onto a secondary market where its physical properties were not particularly suited for this use.

Manufacturers endeavoring to promote the use of their products by government agencies soon found the avenue to this outlet blocked because of the lack of published standards or specifications required of products seeking this market. Standards were needed as technical guides for design engineers and architects as well as a basis for arbitration when complaints arose between buyer and seller. Producers needed standards or specifications to help develop their quality control program and to determine what is required of their product to serve a specific market they do not now enjoy. Potential manufacturers of particleboard need standards to determine the type of product to produce, or the market to enter.

Types of Standards

There are many types of standards ranging from industry association standards to federal specifications but basically standards fall into two main categories, namely, the General Over-All Descriptive Type and the Specific End-Use Standard.

General type standards: These standards or specifications have the advantage of allowing all or virtually all producing companies to qualify.

It is usually easier to effect a general type standard because they are merely a description of particleboard without regard to how the board will be used. Many times the general-type standards could be considered "panic" standards where a segment of the industry is being blocked from a sales area because of the formality of not having some form of written standard. The thinking sometimes prevails that "it is better to have a weak standard than no standard at all."

Usually this type of standard allows for subsequent divisions to more specific product classifications which, by and large, eventually overcome its original shortcomings. If these changes or modifications are delayed, the net result is a short term gain with the possibility of very substantial ultimate loss, which is slow in correcting. Examples of General-Type-Standards are government Commercial Standards and Federal Specifications. This approach to early product standards is often justified by virtue of expediency, but should most certainly be strengthened as soon as possible.

End-Use Standards are usually industry sponsored by those companies already operating in a specific market area. Requirements listed in this type standard are usually specific, detailed and exacting. Because of the nature of their development this standard usually restricts and limits the manufacturers who are able to supply a product with the physical properties required. End-Use Standards assure the customer of getting a product designed to do a specific job and not merely a general description of a collective industry product. These standards will often include details of how the product is to be used in order to fulfill the requirements of the specific job. Other board producers are supplied a definite goal to shoot for if they intend to offer their product in competition.

Well thought out industry promoted End-Use Standards keep out products which will not perform and by so doing eliminate much unsavory publicity for particleboard in general. Typical examples of End-Use Standards are: FHA Interim Standards, Industry Association Standards and ASTM Standards.

Development of Standards

1. The earliest widely recognized particleboard standard was an FHA Interim Standard for Floor Underlayment, Kitchen Counter-Tops To Be Overlaid With Plastics, and Wardrobe Doors. This Standard was issued in June 1956.

2. F.H.A. Standard for Particleboard Wood Block Flooring: This is a fine example of an end-use standard in which the unique application of the product requires physical property values and test procedures to be primarily of an empirical nature but very specific and based on the best known information of what is required to indicate satisfactory performance. Established in November 1959.

3. The West Coast Particleboard Association Standard For Particleboard Floor Underlayment: This Standard is an expansion of the above mentioned FHA Interim Standard which more accurately defines physical property limitations and tolerances. Established in May 1960.

4. West Coast Particleboard Association Standard For Non-Structural Exterior Particleboard: This Standard is based on the interpretation of ASTM Test Procedures for wood composition panels to be used in exterior applications. Issued in May 1960.

5. National Particleboard Association Standard for Mat-Formed Wood Particleboard Floor Underlayment: This Standard closely parallels the above mentioned WCPA standard for floor underlayment and generally strengthens the requirements of the old FHA Interim Standard. Issued in July 1960.

6. U. S. Department of Commerce, Commercial Standard (CS 236-61), Mat Formed Wood Particle Board (Interior Use): The National Particleboard Association sponsored the promulgation of this General Type Standard for interior particleboard. An Association standards committee is continually working to improve and strengthen this standard. Issued June 1961.

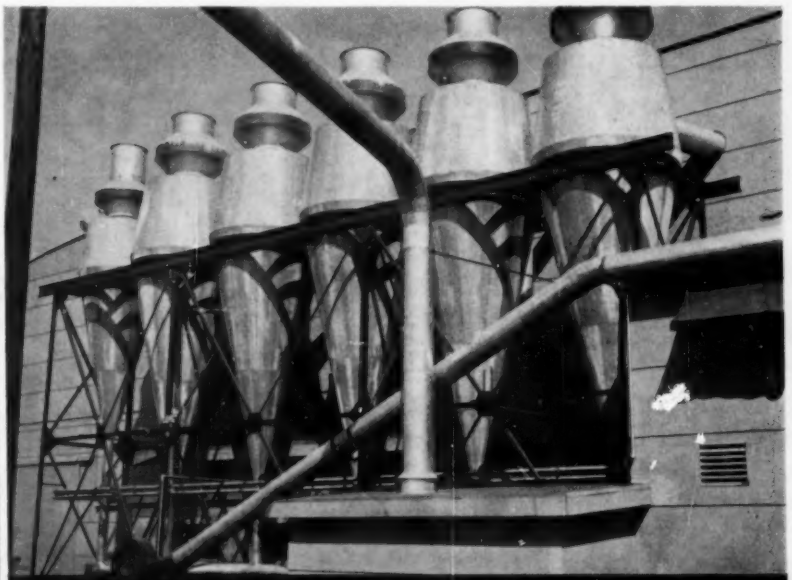
Having gained knowledge by field experience, utilizing the Interim Standard for floor underlayment, the FHA removed particleboard underlayment from the "non-standard product" category requiring individual product Material Releases, and issued a "Use of Material Bulletin (UM-28) for Floor Underlayment." The basis of this issuance is a compliance requirement in their UM Bulletin to NPA Underlayment Standards. This Use of Materials Bulletin was published in March, 1961.

To my knowledge, these are the only nationally recognized Standards existing in the particleboard industry today. Both particleboard associations (WCPA-NPA) have Technical Committees actively working on revision and refinement to their respective Standards and are working with government agencies to gain increased recognition of their Standards. The development of new standards and specifications to cover specific end-use applications is a continuing program with industry associations.

Product Certification

Establishment of sound standards and product specifications are an absolute necessity to the advancement of the particleboard industry but will be of little value if standards are not ardently adhered to by all manufacturers. Standards are only as good as the willingness of the producers to see that their products actually meet the established minimum physical properties listed. Producers must be willing to certify their

(Continued on next page)



Pictured are the 6 cyclones serving the American Sheet Metal blower systems installed at Georgia-Pacific's Springfield, Oregon, plywood plant.

American Sheet Metal efficiency isn't news to Georgia-Pacific

The management of giant Georgia-Pacific has long been familiar with American Sheet Metal's efficiency. As in many earlier installations, American Sheet fabricated the low pressure blower system at Georgia-Pacific's new addition to its Springfield, Oregon, plywood plant.

In all, American installed 8 major blower systems at the Georgia-Pacific Springfield plant, utilizing over 1 mile of pipe. Sander dust, for instance, is conveyed 1,000 feet to the boiler room for direct firing.

When again you are faced with a problem involving sheet metal do as the leaders of the plywood industry do. Call in American Sheet Metal Works. Prices are competitive.

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Manufacturers of Blowers
920 NE Glisan Portland, Oregon BE 2-0111

products—either through "Self-Certification," or preferably, "Certification by Independent Testing Agencies." When either method of certification is used, the individual panels should be identified as to the standards they are meeting, and the trade-name or name of manufacturer producing the panel.

Self-certification: This form of certification means the manufacturer certifies that his products meet the Standards indicated. It is my belief that we should take a page from the Douglas Fir plywood history and realize that self-certification is not adequate. It requires but one producer to knowingly or unknowingly misrepresent his product as complying to a stated Standard to drastically damage the integrity of the entire industry. Compliance with a Standard is not a "one time" evaluation, but requires a consistent and adequate quality control program.

Independent certification: There are certainly objections to independent certification. It is the belief of some producers that independent certification constitutes interference with the privacy of their business. A manufacturer may feel that his quality control program is adequate and this form of certification is unduly costly and a duplication of effort. The criticism is sometimes heard that an independent agency may tend to control and dominate an industry. These are objections to this form of certification and cannot be denied. However, experience has shown that this form of product control is required.

A manufacturer must maintain product quality, regardless of market conditions, and resist the ever-present temptation to reduce quality for the sake of a more competitive price position. Independent certification is an aid to management for policing the performance of its production personnel. It also assures the customer of compliance to an established standard, regardless of when, where, or who produced the panel. It emphasizes the merits of domestic products over imports and lends prestige to manufacturers in arbitration of complaints.

Certification by a recognized, responsible testing or inspection agency gives particleboard dealers an added sales tool and he may be able to pay more than for an uncertified board.

This need is presently recognized by some particleboard manufacturers to established standards.

It is the opinion of the writer that if the particleboard industry is to grow and expand and develop market tentialities to the fullest, there must be clearly defined, restrictive End-use Standards, product identification and independent certification to assure compliance with these standards.

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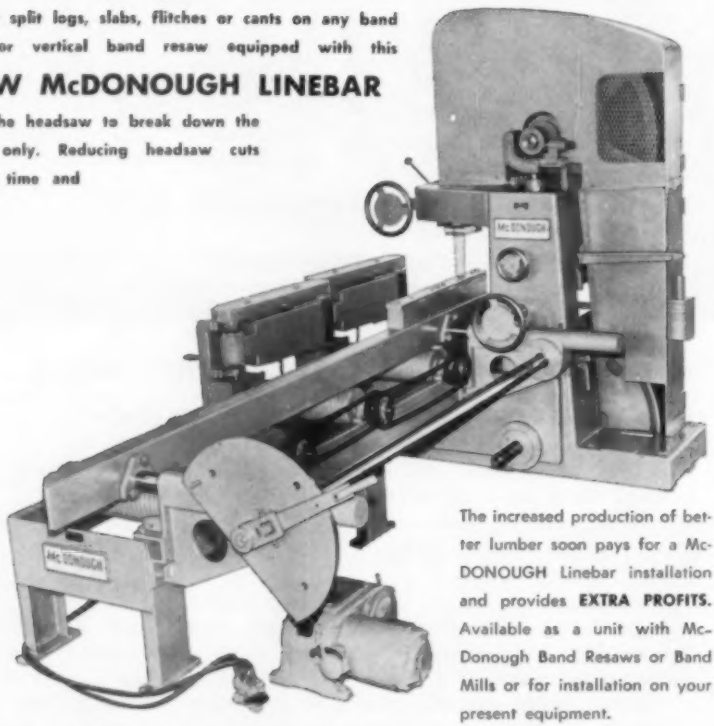

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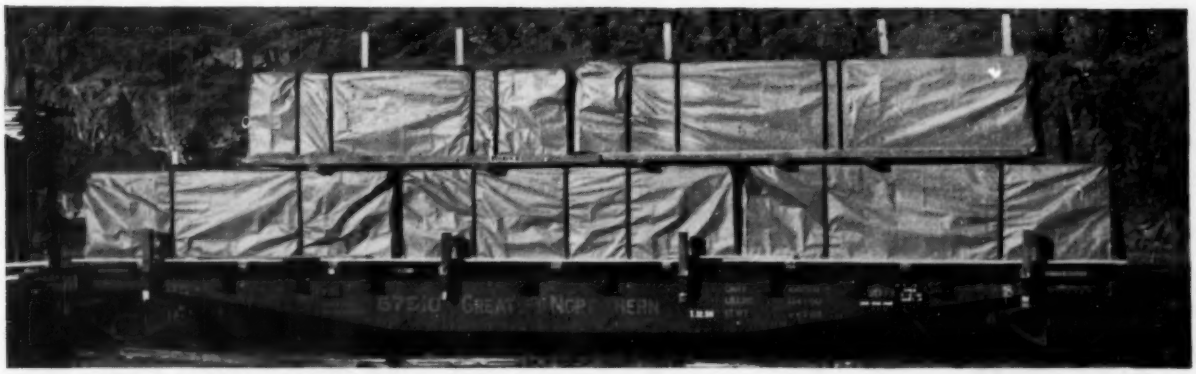
Prentice to Handle Timesavers Speedbelt Sanders

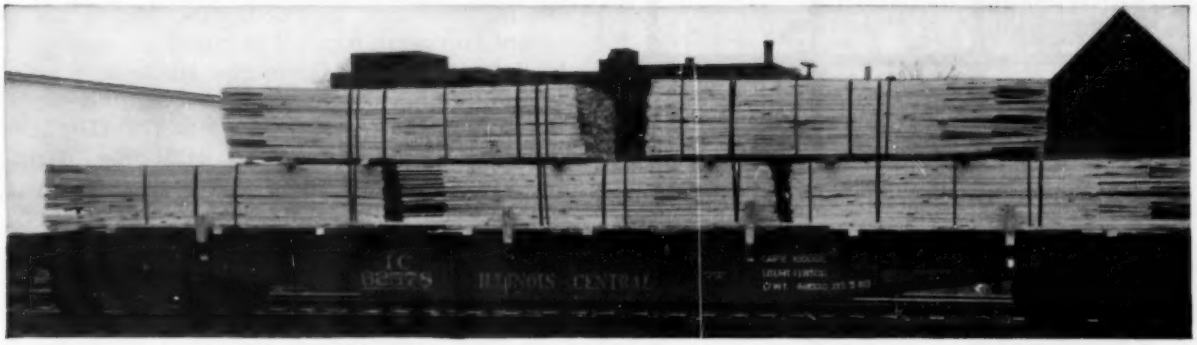
E. V. Prentice Co., Inc., Portland, Ore., has been appointed distributor for Timesavers Speedbelt Sander line, L. S. Sternal, sales manager of Timesavers Sanders, Inc., Minneapolis, Minn., has announced.

Prentice will handle the entire wide abrasive belt sanding and finishing equipment in the furniture, woodworking and forest products industry. According to Sternal, the move was made to facilitate sales and services to firms located in Northern California, Oregon, Washington, Montana and Idaho.

A Timesavers has been installed in the Prentice, Portland, Ore., office for demonstrations and running of samples. Information is available from E. V. Prentice Co., Inc., or direct from Timesavers Sanders, Inc., 5270 Hanson Court, Minneapolis 22, Minn.



SHIP LUMBER WRAPPED



OR SHIP IT UNWRAPPED

Signode develops a still better flat car packaged lumber load

Packaged lumber at the lowest on-board cost of any AAR published load.

Published by the AAR April 24, 1961. Section 5, Figure 6B, AAR open top car loading rules

This new Figure 6B load offers maximum security with minimum trouble. Just to start with, it's a stub stake load, and only four pairs of stub stakes are required. All wooden bracing specified for the load is in standard lengths of lumber. Elaborate center bracing is not required. Crews quickly acquire proficiency and speed in preparing the load. Obviously, it lets you take advantage of the availability of flat cars and make efficient use of mechanical handling equipment in loading. And your customer makes substantial savings in time and cost in unloading and handling his shipment.

The Figure 6B load accommodates all sizes of lumber eight feet or more in length, and is the best load yet for wrapped lumber.

Behind this load is a year of experimental test shipments by interested mills, with the cooperation of the AAR, and painstaking study of arrival conditions and modification of shipment patterns by Signode engineers. More than 125 test shipments were made.

There's a Signode man near you who can greatly expedite your first uses of this new load. His information is first-hand. He can guide you to the most efficient loading and bracing sequences, will help make sure correct strapping tools are used and that they are used so that the load is properly secured as easily and quickly as possible.

For complete description of the advantages and specifications of the new 6B load, write:

First in steel strapping

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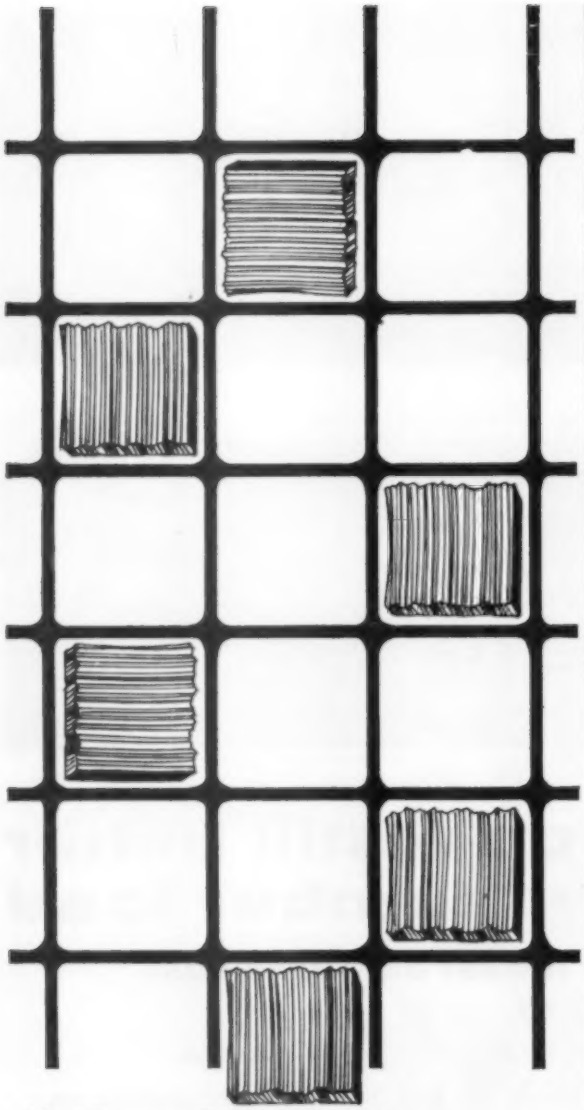
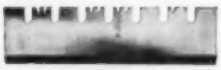
STEEL STRAPPING CO.
2616 N. Western Avenue, Chicago 47, Illinois
West Coast: Los Angeles, Pittsburg, Eugene, Portland, Seattle, Spokane
Canadian Steel Strapping Co., Ltd, Vancouver, B. C.



Uniform Chips with longer lasting Heppenstall chipper knives



Heppenstall Chipper Knives produce chips of uniform size and thickness with a minimum amount of sawdust loss. Uniform chips require less variation in degrees of cooking during a batch cook. Pulp quality is more consistent. Longer lasting Heppenstall Chipper Knives reduce the sharpening cycle—decrease your knife costs per ton of pulp.

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H M H

SPECIAL REPORT

A Look at European Particleboard Industries

By DR. GEORGE MARRA
Washington State Univ. Pullman, Wash.

Particle boards originated in Europe. How and what they are doing with particleboard is thus important. This briefed report on European methods and systems is from a survey made by particleboard authority, Dr. Marra on a recent European trip. It is based on studies in Switzerland, West Germany, Holland, France and England. Permission to publish this chapter of the report was granted to THE LUMBERMAN by Simpson Timber Co. of Seattle, Wash.

PLANT SIZES: General plant sizes in Europe show the best investment return to be from the 100,000 sq. ft. (¾") daily capacity plant. However, smaller plants with single opening presses and having a relatively high output, are coming into more accepted use. The smaller plants gain efficiency by using high press temperatures and short press cycles. Averaging 24 tons daily, most particleboard plant manufacturers are now perfecting equipment for this smaller plant type.

Larger plants have risen in cost to a point where only the larger firms can handle capital requirements. Many believe that the smaller plants will also be better adapted to underdeveloped countries or areas where market potential has not been established. Also, the small plants have more flexible board sizes and can have a larger single opening press. The experience of European producers is that the smaller plants tend to grow, and ultimate plants may have several lines each producing a different type of board product. Recent trends in Europe and in the rest of the world, seems to be toward a higher percentage of these smaller singe-opening press type.

Favored board sizes for single opening units are 8'x16' and 5'x20', to fit into wider market use. However, basic European production today is still with the multi-opening press making the 3-layer flakeboard.

RAW MATERIAL: Either hardwood or softwood residues are suitable for particleboards. However, scarcity of mill residues and scattered source locations, make transportation of chips, mill ends and veneers scrap too costly to haul. The greater volume of raw material thus comes from barked round-wood. Veneers are beginning to be used as are planer shavings where readily available.

European producers agree that the lower density woods produce a superior board. The final product can be of lower density and have the same properties, or it can be brought to equal density with boards made from more dense raw material and have superior properties. The second course is usually followed. That is, density is held constant at .60 to .64 and boards from lighter weight raw materials have the superior properties. For this reason, softwoods are preferred but where other demands for the same material are heavy, mixes of hardwood and softwood are made.

BOARD SIZES: Board sizes are generally increasing in Europe. Starting with the 4'x8' several years ago, averages are now 6'x12'. European producers, however,

recommended that U. S. plants run from 8'x12' to 6'x16' and 5'x20', due to the high percentage of production going into general construction use. In Europe, furniture and cabinet markets still utilize over 50% of the production.

PRODUCTS TYPES: The 3-layer flakeboard with urea resin is the standard of European quality. There are, however, the four basic types of particleboard: 3-layer, homogeneous, multi-layer and extruded.

The bulk of U. S. production is a homogeneous board. However, most German sources would not recommend building a plant, even in U. S., for homogeneous boards. They feel the key to marketing is a broad market and this is best served by the 3-layer board type.

The 3-layer board is one with a core layer and face layers. Usually these are of different particles. Some boards are actually produced by as many as eight forming stations and therefore are made up in eight layers. But by the particle type — they are still only 3-layer.

In best 3-layer boards and in the multi-layer boards, flakes made up from solid wood are the accepted material. In some of the second grade boards, shavings are used. These are generally mixed with flakes on a core layer only.

Principal manufacturer of extruded board is Kreibaum, who is now concentrating on producing panels for prefabricated house use. The panelized construction field appears to be one place where the extruded board fits in large volume. It does suffer the disadvantage of swelling especially in length, should moisture get to it.

TESTING: In testing boards and preparing standards, the following characteristics are given greatest consideration: Modulus of rupture, internal bond, thickness swell, specific gravity and surface smoothness.

PROCESSES: Germany is still the leader in process development. All processes presently in use had their start in Germany or Switzerland and improvements have continued from there. Present developments have been rather slow. Technology appears to have reached a plateau, with basic operations well defined and developed. Changes which are now occurring, affect small segments of the processes rather than tending to revise the basic principles of an entire process.

RESIN DEVELOPMENTS: Final development of new resins will likely take place in U. S. however, rather than in Europe. We have a more diversified and larger general resin market. However, fundamental research may well begin in European laboratories.

In Europe, the greater effort is expanded on fundamental studies; in America, the greater effort is on applied research.

DEVELOPMENT OF FORMED PRODUCTS: Laboratories in Europe are doing extensive work on forming complex shapes from wood particles. Some plants are now producing items of this type. Furniture factories, for instance, are finding that this method of production is cheaper than forming the articles of solid wood in many cases and even for upholstered furniture.

Material is exactly the same as that for the forming line of a particleboard plant. First operation is to press the flakes into a general form to shape the finished article, but without curving or tearing the resin. The loose mat is then transferred to a high pressure heated press to cure.

The basic difference between European and American presses, however, is the method of heat. Hot water is accepted method in Europe, while steam is generally used in U. S. Europeans claim for hot water the benefits of more uniform heating, less corrusion, less installation cost and less maintenance.

POTENTIAL MARKETS: Future markets for particleboard are difficult to evaluate. Germany presently con-

(Continued on page 70)

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sumes 72 sq. ft. per person per year while U. S. consumes 1.4 sq. ft. of our own production plus a small amount of imports. Costs are less than plywood or lumber, primarily because the value placed on raw material is low. The product therefore does not return to the stump any amount of profit compared with other products. This is not serious disadvantage as long as the material used is currently wasted . . . it does become a more serious consideration when the raw materials must be produced specifically for particleboard use.

Particleboard is essentially a core material. Many attempts have been made to use it as a finished material, with exposed face, but no great markets have yet been developed for this use. With competition of polystyrene and polyurethane moving into the core markets this can become serious competition where low weights and costs are important.

In this respect, a great deal of market study and research are indicated to guide industry development.

FESYP Group Active

More familiarly known as FESYP — The European Federation of Particleboard Associations was founded in May of 1958. Association groups in the following countries agreed to collaborate in the federation: France, Austria, Belgium, Italy, Great Britain, Switzerland, Germany, Denmark, Sweden, Norway, Spain, Portugal and Finland.

Bureau officers are: President: M. de Longeaux, France; vice-president, Mr. Steeger, Germany; secretary-general, Dr. Muller, Germany. Activities of the association include:

Economic studies: Gathering various data on production, capacities, sales potential, imports and exports, and other important information for complete European market survey, and developing statistics and market reports.

A great number of tariff problems resulted from the economic groupings of FESYP, adding to the difficulty of obtaining a uniform classification of all particleboards in the Brussels Nomenclature. The gradual abolition of tariffs, being applied within a customs union as well as elimination of other restrictions within E.E.C. and E.F.T.A., play special roles.

The Federation maintains contacts with other European Organizations such as FAO, OEEC, ISO and UNO, and is a center for international exchange of information on particleboard.

An international conference on particleboards is to be sponsored by OEEC in the next year in which FESYP will assist. An international standardization of particleboards is to be created by the ISO.

Study of Technical questions is of vital interest for the still young particleboard industry. All member countries are therefore actively collaborating in the Technical Committee, with valuable contributions made from research institutions in various countries.

Discussion of national standards and creation of quality marks in individual countries, elaboration of technical data, extension of field application, are principal tasks of the Technical Committee.

FESYP carried through an international exchange of information, now being followed by a second program. Bulletins are issued for member firms of affiliated associations reporting on economics, techniques, organization and literature. Quarterly import and export statistics are compiled. All FESYP publications are bilingual — German and French. They are now building a multilingual dictionary for the particleboard industry.

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INDUSTRY MEETINGS

JULY

National Wooden Pallet Manufacturers Association, annual meeting, July 2-4, Chateau Lake Louise, Lake Louise, Canada.

West Coast Wood Tank Association, annual meeting, July 13-14, Washington Athletic Club, Seattle, Wash.

Appalachian Hardwood Manufacturers, Inc., summer meeting, July 17-18, Mayview Manor, Blowing Rock, N. C.

The Wooden Box Institute, July 20-21, The Mark Thomas Inn, Monterey, Calif.

AUGUST

Ponderosa Pine Woodwork, August 1-3, Fairmont Hotel, San Francisco, Calif.

Tenth Pacific Science Congress, Section of Forestry, August 21 - Sept. 6, Univ. of Hawaii, Honolulu.

SEPTEMBER

Western Pine Association, semi-annual meeting, Sept. 13-15, Multnomah Hotel, Portland, Oregon.

Lake States Logging Congress, Sept. 14-16, Green Bay, Wis.

First Intenational Conference on Timber Engineering, Sept. 18-23, University of Southhampton, London, England.

Forest Industries Equipment Exhibition, Sept. 19-22, Central Canada Exhibition Ground, Lansdowne Park, Ottawa, Ont.

National Hardwood Lumber Association, annual convention, Sept. 26-27, Statler-Hilton Hotel, New York City, N. Y.

OCTOBER

Western Building Industries Exposition, Oct. 7-10, Great Western Exhibit Center, Los Angeles, Calif.

Society of American Foresters, Oct. 8-11 Minneapolis, Minn.

National Forest Products Week, Oct. 15-21

NOVEMBER

National Retail Lumber Dealers Assn., Nov. 1-3, annual meeting, Chicago, Ill.

Pacific Logging Congress, Nov. 6-8, San Francisco, Calif.

DECEMBER

Western Forestry Conference, Dec. 6-7-8, Portland, Ore.

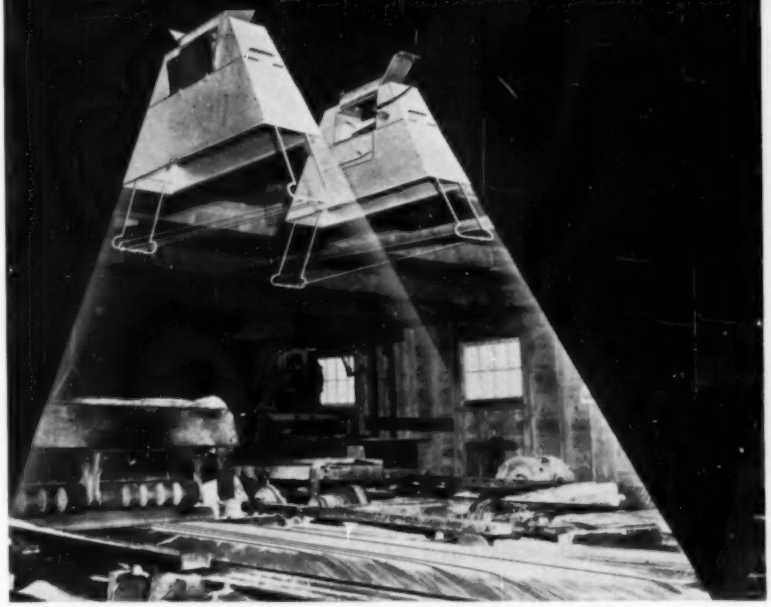
Japan Seen as Market

At the World Forest Products Trade Seminar recently held at Oregon State University, Corvallis, Oregon, Japan was seen as a tremendous opportunity for export markets.

James Owens, director of the Forest Products Division of the Business and Defense Services Administration, Department of Commerce, predicted Japan would need at least 6 million family dwelling units exclusive of apartments within a few years.

The Japanese market, with a population to exceed 100 million by 1970, can be a consumer of enormous quantities of American goods, he said. He quoted statistics showing that exports of Pacific Northwest softwood lumber to Japan nearly doubled between 1955 and 1960.

Carter GUIDE LINE LIGHTS



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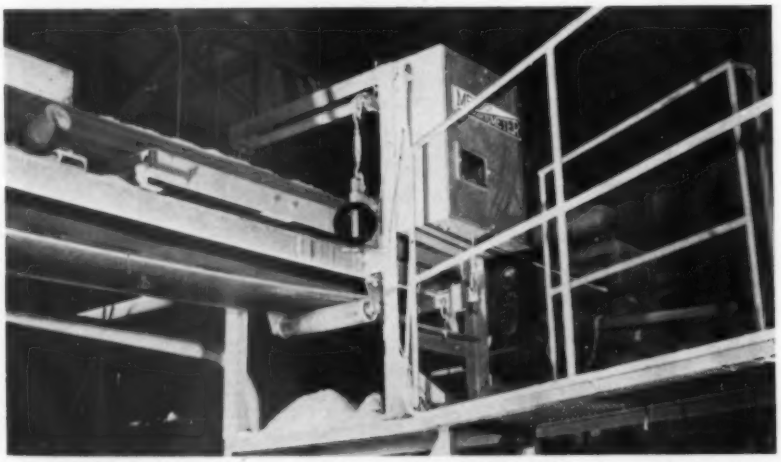


This is how the weighing mechanism was installed on the conveyor belt. Circle marks one of the rollers on which the belt rides. Rollers are mounted in the framework (1) which is suspended so that weight variations are sensed continuously and recorded.

Installation of the weigh-belt on the Novoply production line at the U. S. Plywood Corp. plant at Anderson, Calif., has resulted in a saving of 15% in resin costs. Continuous proportioning of resin and core material has resulted from introduction of the Weightometer and its signaling and controlling components. Quality control is simplified and quality is improved, for there now is an extremely narrow range of tolerances within

The Merrick Weightometer is the heart of the system. Note hook and turnbuckle arrangement supporting the framework.

Reverse Roll-Coater Improves Filling

By using a reverse roll-coater as the initial machine in the finishing line, Abitibi Corp., Alpena, Mich., gains both uniform surface and operational speed-up for their hardboard prefinish line.

The Black roll-coater first applies Arco Co., Fil-Coat filler-sealer to the surface of smooth 2-side hardboard, preliminary to the flow-coating of the top coat. According to R. E. Paul, control superintendent of the plant, the reverse-roll coating is the best method for their application of filler-sealer. No intermediate sanding operation is necessary between filling and final coating.

Outfeed side of back-roll filling machine. In left foreground is Graco PowerFlo direct-from-drum, air-powered pump. The pump keeps roll-crotch reservoir filled. Pump may be air-power lifted from drum for changing. Offbear belts convey panels through curtain coater and balance of system. Ingenious traveling spray nozzle on Black back-roll filler keeps material evenly spread when thick filler materials are used.

Immediately before being transferred to the surface of the stock being filled, the filler is held in a roll-crotch reservoir of the Black machine, between the top infeed doctor roll and the top coating roll where the filler is applied to the board.

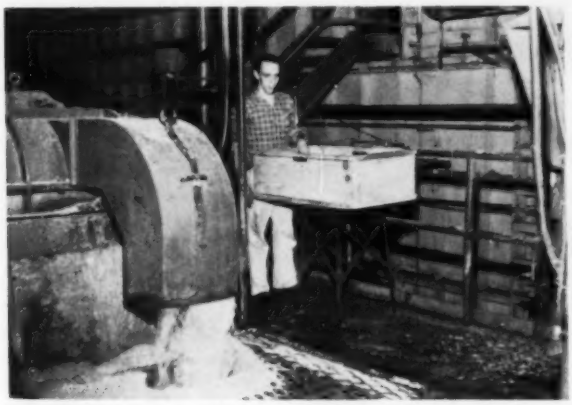
The method employed for introducing the filler stock to this roll-crotch reservoir is a matter of choice with individual plants. In the Abitibi layout, however, this is accomplished with a direct-from-drum, air-powered Graco PowerFlo pump placed over the top of the paint drum. The pump is mounted on and supported by a sleeve tube which also permits lifting it by air pressure at drum-changing time.

Fil-Coat, applied by the Black roll-coater, provides a smooth surface, although it is a highly viscious material. It furnishes an excellent "hold-out" for decorative finishes applied later. Abitibi uses their reverse roll-coater on hardboards ranging from ⅛" to 5/16" thick.

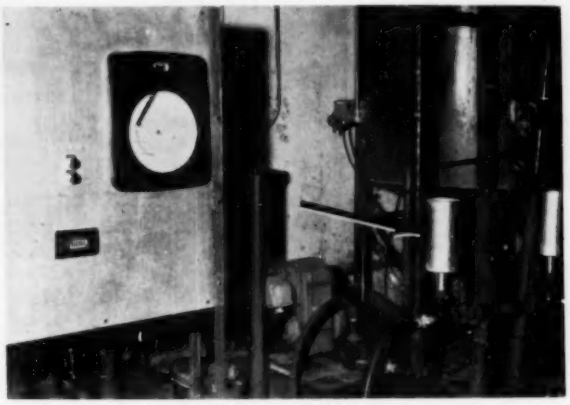
which the mix is made, and the physical characteristics of the end product are maintained with the greatest possible uniformity. The flow of resin now is constantly closer to the minimum established by the company for the glue content of the board.

The conveyor belt itself remains an endless one, but a section of the supporting rolls has been replaced. The new section is independent of the rest of the structure and registers variations in core material weight as the load moves on its way. Variations are recorded instantly and automatic adjustments of resin flow are made just as quickly. The old system involved taking physical samples of the core material and of timing resin flow into a calibrated container. Readings were taken, computations made, and adjustments made in resin flow. The lag inherent in this method has been eliminated. The extra margin of resin allowed for assurance that all tolerances would be met is now reduced. Weigh belt systems have been installed on both Novoply lines.

Old manual system is held only as standby emergency unit

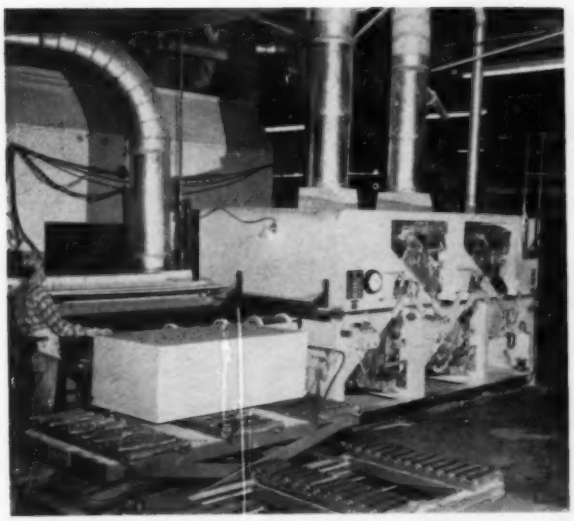


The old system consisted of putting the wood box into the core material flow (foreground) for a timed interval and then weighing the load on the scale where the box now sits.

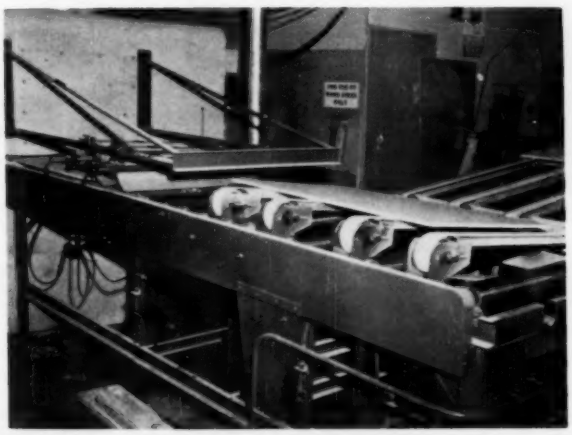


The second part of the former method was to open the valve on glue flow line at calibrated container (arrow) and record fill-up time. Readings were correlated to proper mix.

Multi-Wide Belt Sander Increases Manhour Footage



New 4-belt Smithway sander is in operation at the U. S. Plywood Novoply plant at Anderson, Calif. Prior to installation of this unit, four single deck, endless bed sanders were used. The changeover has meant an increased sander footage per man hour. Though capable of speeds up to 200 feet per minute, the wide belt sander is being run at from 80 to 120 feet per minute. Allows rapid change from various types of contact rolls to various types of platens.

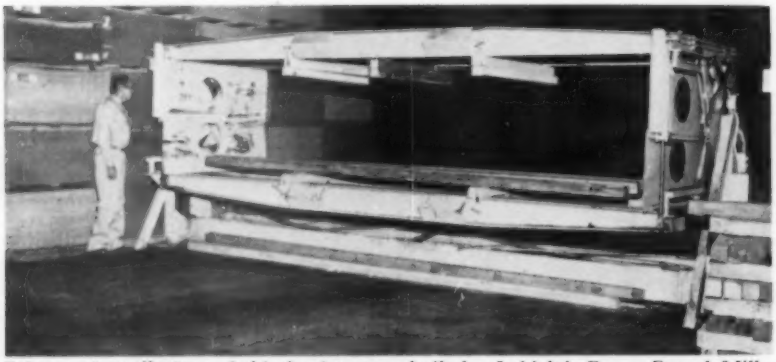


Here's the outfeed end of the sander, with the rising and falling cross transfer belts in the up position. At left, attached to the sander housing is a twin-armed support for trip switches which actuate the cross transfer belts according to panel lengths. Many sizes of panels are put through the machine and the trip plates which "read" their lengths are adjustable, being slid back and forth along the tubular arms just above the outfeed table. The bracket supports for the trip plates and switches are held in position by simple tightening clamps.

Ideas at Work

Production upgraded at Weyerhaeuser hardboard plant by board turner, airless spray prime-coating and modified feed system for punch press: Automatic deckle transfer system at U. S. Plywood's Novoply plant.

Takes only seconds to turn hardboard package at Weyerhaeuser Co.

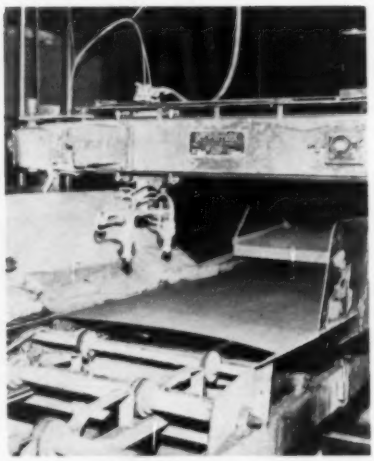


Prior to installation of this load turner, built by Jeddeloh Bros., Sweed Mills, Inc., the boards were turned by hand for planing on the screened side and then turned again. The job now is done in a fraction of the time it formerly required. Size of the equipment may be appreciated by comparing it with the person at left. Operating mechanism is at right. The open and close action is by hydraulic power, acting through X-formed scissor arms at each end. Turning action is through chain drive. Weyerhaeuser plant at Klamath Falls, Ore.

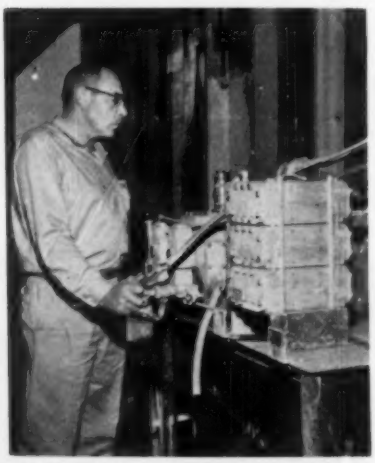
The lift truck operator delivers the loads and controls the turning operation. Here he has removed stringers left from the previous load (see above photo) and is placing them atop the new load to be turned. Stringers run full span, top and bottom.

Some details of construction are shown as the turner reaches mid-point in the revolving cycle. There are three stringers, top and bottom, matching the longitudinal members in the structure. Arrow points to push button control panel for the turner.

Airless spray coater does better job



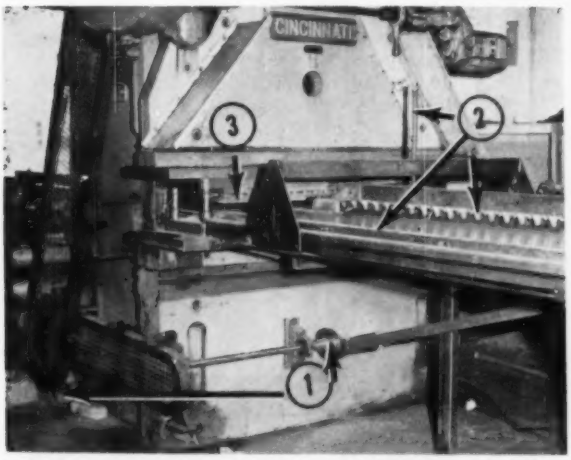
Prime-coated board now is being shipped from the plant, the coating being applied with this Nordson airless spray. The head, slightly blurred here as it moves back and forth across a board, travels on this overhead beam. Lead end of board has already entered drying oven at Weyerhaeuser Klamath Falls plant.



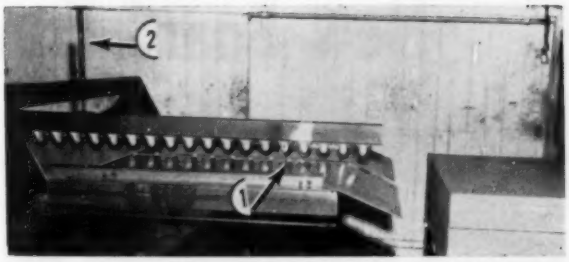
Bill Harrison demonstrating the mix and pressure chamber of the airless spray. The spray was installed to achieve a smoother and more uniform coating and one with improved adhesive and drying characteristics. Roller coating will not produce the desired results for prime coating, but does do the job on pre-sealed board. It is routinely used on the product.

Punch press feed ups efficiency

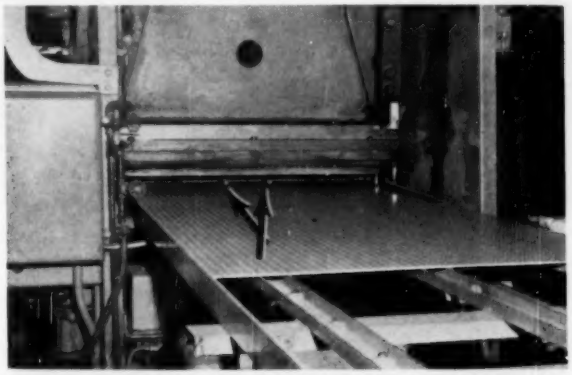
at Weyerhaeuser hardboard plant



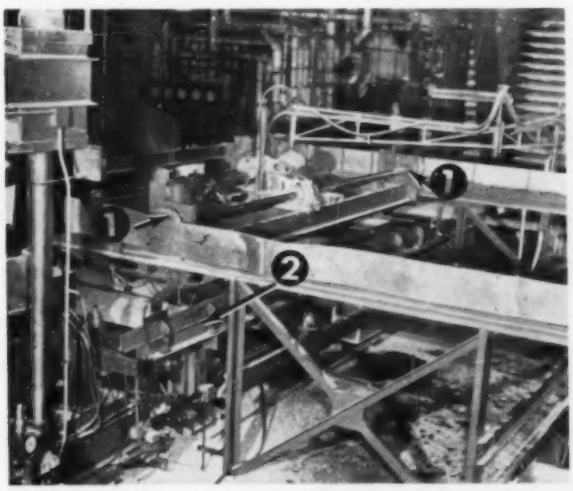
Production efficiency on the Cincinnati press, used to turn out perforated board, was improved by modification of the feed system and by addition of a stripper bar below the punches to separate the board from them as they withdraw on the up-stroke. Precision-spaced feed lugs are connected to the press cycle mechanism at (1) and through the drives behind the safety screens. Skate rolls, suspended from two cross beams (2) are adjustable and on each side of the rolls is a ski-shaped hold down and feed bar. The stripper bar is at (3) and resembles the bottom half of a sandwich, with the filling being a set of small, coiled steel springs, which pushes down on the board face as the punches withdraw from it. The bar, or plate, is suspended from the punch mount.



In this view of the feed end of the table, the feed lugs are partially visible as small triangles (1) rising from the feed table surface, directly beneath the skate rolls. Here also is seen the second of the two cross beams (2) which support the skate rolls and through which adjustment shaft passes.

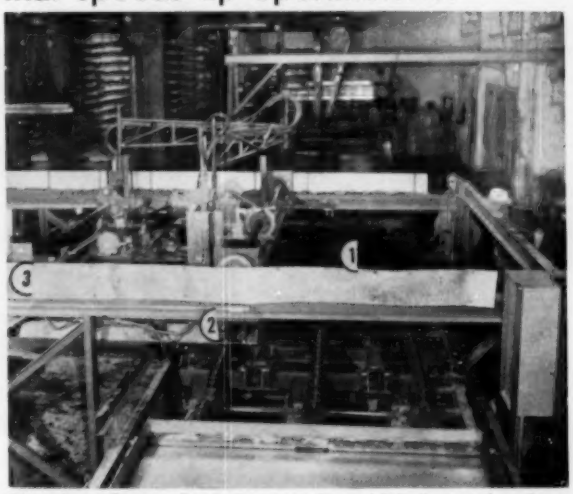


The final row of perforations has been punched on this board emerging from the press and the leading edge of the next board is visible as the thin line below the stripper bar (arrow). The two light dots in center are the tail ends of the ski-shaped hold down bars on the infeed side. The feed system was built by Pacific Tool & Die Co.



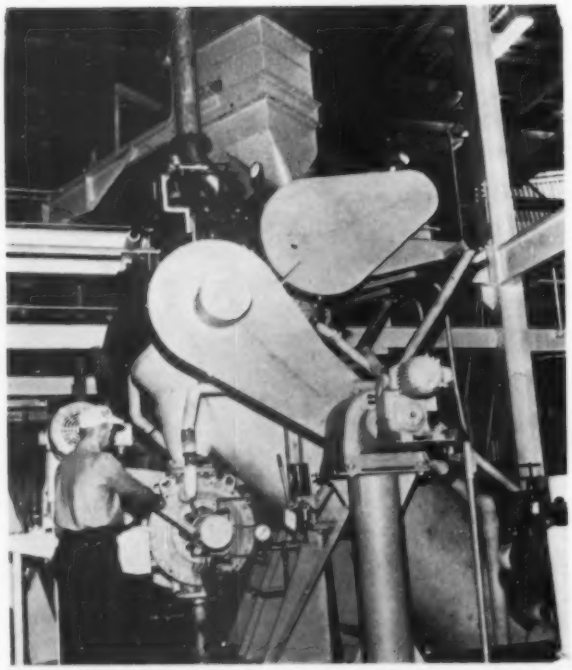
U. S. Plywood Corp. has recently installed an automatic deckle transfer in its Novoply plant and now both production lines for this board are similarly equipped. The transfer is air actuated and electrically operated. It moves on geared wheels (1). Here, in the ready position, the deckle has just been moved into contact position and the transfer is about to lift it, holding at four points. One of these is at (2). An air actuated shaft, solenoid-like, engages an inverted U-bolt loop at each corner and locks into position.

An automatic deckle transfer that speeds up operation....



Nearing the end of the transfer which began in photo above, the machine is about to deposit the deckle onto the oncoming caul (1). The near point of support and suspension is at (2). Note guard fences alongside each track (3). U. S. Plywood Novoply plant, Anderson, Calif.

New Board Equipment Introduced



Washington Iron Works Press is 12-opening, 76" x 130", key equipment item for the first board plant in Venezuela, designed by Columbia Engineering Co., of Vancouver, B. C. The 3,350-ton press going to Tablopan de Venezuela, Caracas is scheduled to begin operation by 1962. It is equipped with pressure and temperature control to produce, softboard, particleboard and hardboard of varying thickness and density. Has the patented Washington simultaneous - closing feature plus temperature - compensated platen guides.

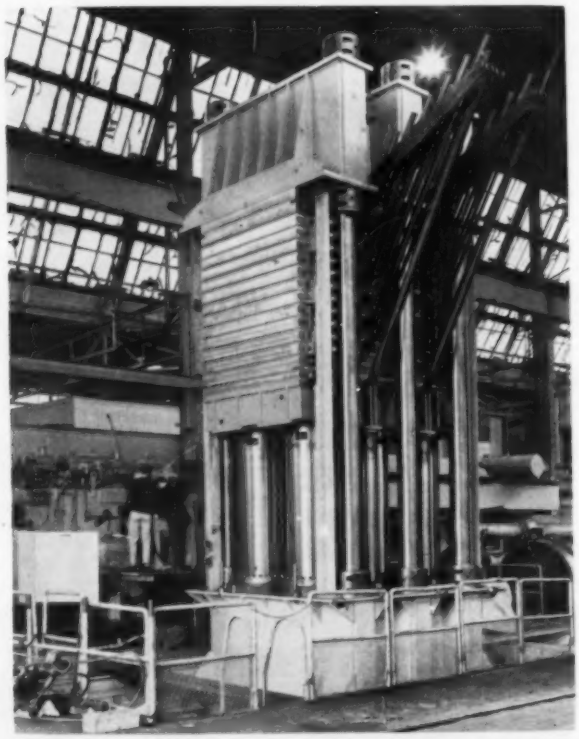
Manufacturer: Washington Iron Works.

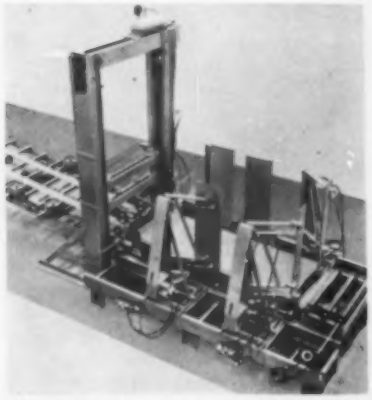
For more data, circle 401 on page 80

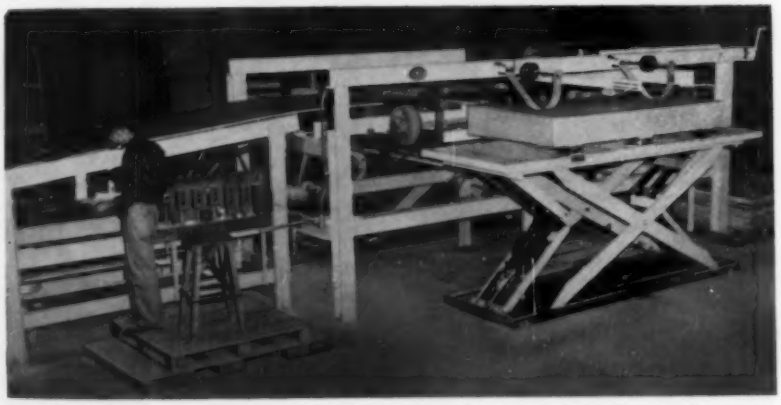
Bauer M&D continuous digester has automatic control and wide range of versatility in cooking or chemically-treated chips. Model 3′ in diameter and 34½′ long is designed to produce 100 tons of product per day, based on 10-minute dwell time, using cooking pressures up to 150-psi. Equipped with two Bauer-Grenco 8" rotary valves.

Manufacturer : The Bauer Brothers Co.

For more data circle 400 on page 80





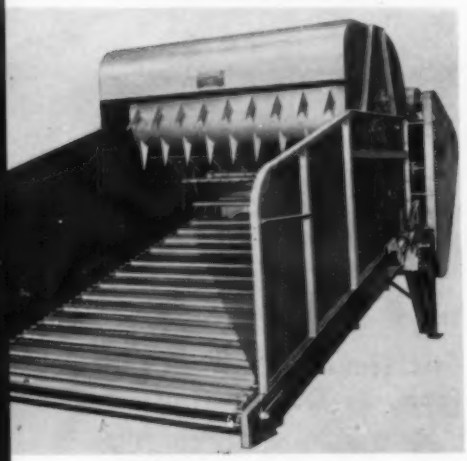


Coe stacker (left) employs hydro-pneumatic stacking which moves steadily upward with the production. When pile is completed, end stops swing aside and pile advances as bottom board of next stack passes over tipple as tipple moves downward. Unit has three automatic side aligners. For unstacking, tipple is equipped with extended suction heads which lift top piece and feed it to nip rolls. Feeding rates of 150′/minute can be attained. Side sweep stacker (right) handles boards of panels continuously, building a pile on one side and then shifting automatically to opposite side when predetermined number of sheets have been accumulated. Scissorlift lowers until full count is received, then lowers to the floor for removal of load by lift truck.

Manufacturer: Coe Manufacturing Co.

For more data, circle 402 on page 80

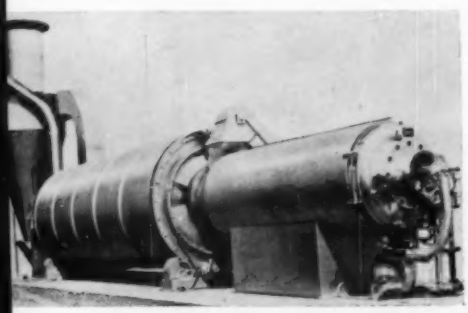
Feeders, Dryers Serve Board Industry



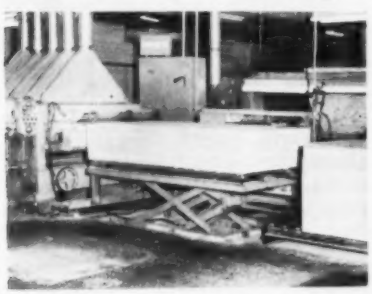
Heil feeder (above) can be used as surge bin between chipper and dryer or can be used to deliver a uniform flow of large particles to a grinder or attrition mill. Holds 880 cubic feet of raw material and can deliver 3,500 cubic feet of wood chips or fiber per hour at a uniform rate. Large model SD 125-42 dryer (below) can evaporate 30,000 lbs. of water per hour. Firm manufactures models as small as 500 lbs. of water per hour.

Manufacturer: The Heil Company; Sales: Arnold Dryer Co.

For more data, circle 403 on page 80



Automatic Panel Feeder Serves Board Processing



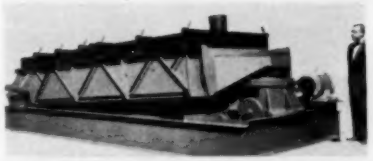
Specifications: J&H Panel feeder is fully automatic. Changeover time for loads is less than one minute. Automatic load feeding equipment is also available. Can feed panels ranging from ¼" thickness and up, of any desired width or length. Elevating bed can be retracted to bottom position for maintenance on equipment being fed. Furnished with all electrical and air equipment for complete installation.

Manufacturer: Western Machinery Corporation.

For more data circle 404 on page 80

Large Screener Developed For Particleboard

Specifications: ROTEX Model #73 screener has three screening surfaces, each of which measure 80" x144", providing 80 square feet of each of the surfaces. Intense gyratory motion stratifies material for speedy separation. Balls, in conjunction with bevelled partitions produce a ball action which eliminates screen blinding. Positive displacement motion provides constant conveying and screening action.



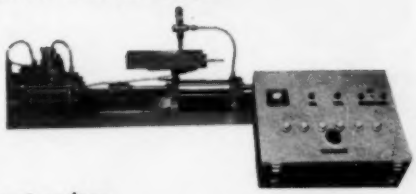
Manufacturer: The Orville Simpson Company.

For more data, circle 405 on page 80

Sel-Set

2 NEW, LOW COST "PROFITMAKERS" For Your Sawmill

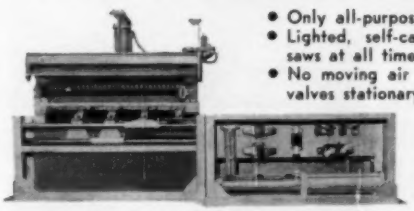
1. EXCEL-O-MATIC RESAW SETWORKS



- Highly simplified with unequalled setting accuracy.
- From 2 to 20 pre-set setting positions for line-bar; vertical, horizontal resaws.
- Infinitely adjustable from zero to the full setting range.
- One cylinder assembly in a small compact package.

Here's versatility and quality in a brand new all purpose resaw setworks that revolutionizes all previous concepts of linear positioning and gives you precision hydraulic positioning with the simplicity of pneumatic power. Shown above is a pilot testing model line-bar setworks that ran through 100,000 cycles of action with only minor adjustments. Standard models are even more compact with tandem cylinder. Dust proof control panel can be mounted at any remote position, overhead or pedestal.

2. EXCEL-O-MATIC EDGER SETWORKS



- Only all-purpose, infinite range model ever to be offered.
- Lighted, self-cancelling pushbuttons indicate positions of saws at all times.
- No moving air or hydraulic connections. All cylinders and valves stationary.

The only edger setworks that can be mounted completely below transfer chain and edger roll elevation. All saws can be positioned in ⅛" increments for full travel on arbor and positioning of all saws can be in reference to either or both sides of infeed table. Positioning of any one saw results in the automatic movement of other saws, and retains previous spacing relation. Control buttons for each saw are arranged in 10 multiples similar to manual setting scale for easy operator transition. Installation is fast and low in cost with a minimum of adaptation and no loss of production time.

WRITE, WIRE OR PHONE FOR DETAILED INFORMATION AND PRICE QUOTATIONS:

Authorized Sel-Set Dealers and Distributors Having Complete Sales and Service Facilities

THE WHELAND CO. Chattanooga, Tenn.
GENERAL MACHY. CO. Spokane, Washington
KLAMATH MACHY. CO. Klamath Falls, Ore.
MILLER MACHY. CO. Missoula, Montana
MARSHFIELD ELEC. CO. Coos Bay, Ore.
PATTERSON SALES CO. El Paso, Texas
FRED E. BARNETT CO. Eureka, Ukiah, Sacramento, San Francisco
NORTHEAST OHIO MACHINE BUILDERS, INC. Columbiana, Ohio
In Canada ELWORTHY & CO., LTD. Vancouver, B. C.

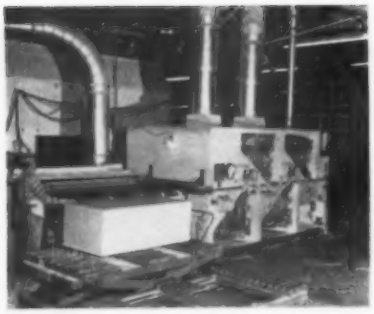
SEL-SET Machinery Corporation

290 Moyer Lane Box 1035 Salem, Oregon

EMpire 3-3123

®SEL-SET, SELECT-O-MATIC ARE REGISTERED TRADEMARKS OF SEL-SET MACHINERY CORPORATION

U. S. PATENT NOS. 2574393, 2661036, 2661402, 584786, 2696853, 2888047, 2893448.
CANADIAN PATENT NOS. 39470-1951, 502416-1954, 511025-1955, 514898-1955.

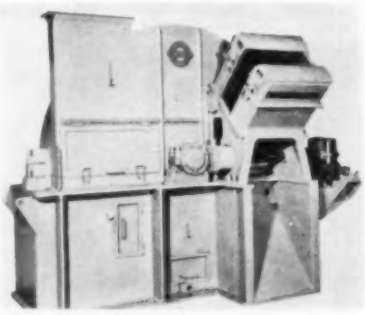


New Smithway 4-Belt Sander Has High Speed Feeds

Specifications: Rugged, heavy-duty machine that is being used for primary, patch, finish and contour sanding. Ingenious design allows rapid change from various types of contact rolls to various types of platens. Some owners are experiencing feed speeds in excess of 200 lineal feet a minute, according to the manufacturer. Machine shown here is in operation at U. S. Plywood, Anderson, Calif. Other models are owned by Crossett Lumber Co., Crossett, Ark.; Medford Corp., Medford, Ore.; U. S. Plywood, South Boston; International Paper Co., Weed, Calif.; Columbia Hardboard, Everett; MacMillan, Bloedel & Powell River (2 in Vancouver, B. C. plants).

Manufacturer: Smithway Machine Sales Co., Seattle, Wash.

For more data, circle 406 on page 80



Disc Flaker Produces Quality Flakes

Specifications: Produces wood flakes 0.012" thick with vertically-mounted disc 93" in diameter. Hopper takes wood blocks up to 26" long. Disc has 16 radial knives, each 27½" long and 5/16" thick. Flakes may be 1½", 1¾" or 2" wide. Shaft is 6" diameter through disc. Opening is 10"x27". Continuous feedworks built with moving side walls and bottom made of steel plates with spurs attached to strands of roller chain.

Manufacturer: Canadian Sumner Iron Works, Ltd.

For more data, circle 407 on page 80

Unit Proportions, Mixes Glue

Specifications: MixMizer takes liquid urea resin from bulk storage. On demand, the pumping unit discharges measured small amounts of resin into mixing cone. At the same time, powdered catalyst, in measured amounts, is transferred from catalyst bulk storage. Continuously revolving blades mix and the mixture leaves the cone through an S-trap at

KOCH

SYSTEMS FOR HIGH SPEED

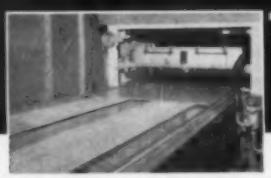
Plywood Panel Finishing

KOCH AUTOMATIC SYSTEMS are engineered for semi or complete automation and equipped to finish flat panels by any process sequence. You can rely on Koch to specify the proper conveyorization for best production. It may be a chain or belt conveyor . . . a wicket or a stacking conveyor. You are assured of fast, efficient drying by Koch's judicious choice of ovens . . . cross-flow, turbo-flow, counter-flow, high-velocity or any of these combined with a radiant energy booster. Koch works in close cooperation with your material suppliers to assure single responsibility results.

Your product may be shingles, panels, siding, tile, etc.

KOCH engineers will survey your requirements **without obligation.** You will be given a complete survey with specifications for utilizing your present or proposed factory.

Multi-zone, high velocity convection dryers or a combination of convection and infrared dryers have doubled production in many plants by speeding up drying operations. Illustrated above is a two-zone high velocity dryer, the first zone operating at 150°, the second at 250° F.



Application machinery such as the Steinemann Curtain Coater illustrated above is furnished as a part of the integrated system.

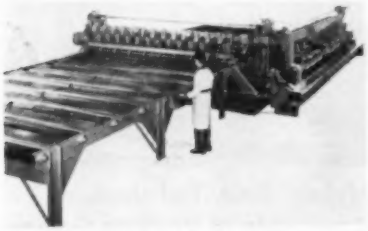
Various automation devices are included in an integrated system including the turn over shown.

GEORGE KOCH SONS, INC.
Evansville 4, Indiana
European Representative: COLONAIR, PARIS, FRANCE

the bottom of the cone, then goes to the glue plan of the glue applicator. Air-operated glue level sensing device turns on proportioning motor when mixed glue is required and turns it off at the proper level. Mixes up to 12 gallons per hour with powdered catalyst at ratios from 5 to 1 to 15 to 1.

Manufacturer: James L. Taylor Manufacturing Co.

For more data, circle 408 on page 80

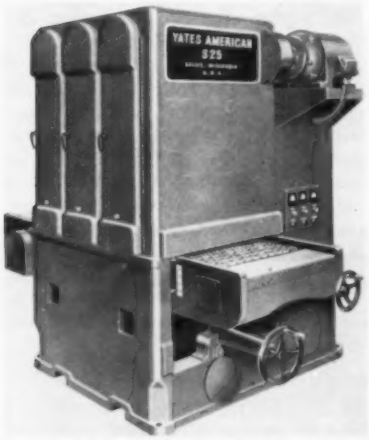


Primary Panel Sizer Adaptable to Any Size

Specifications: Combination high speed roll feed ripping and accurate slat bed cutting has direct coupled splitting arbors, power lift on overhead beams, bed return supports for slats, serrated feed rolls, individual dust hoods on each saw, residue breakup and removal conveyors, roll-case infeed conveyor with alignment fence. Available from 4′ to 16″ rip units and 8′ to 24′ cross-cut with custom sizes available.

Manufacturer: Kohler-Joa Corp.

For more data, circle 409 on page 80



Sander Works Dual For Both Cutting and Polishing

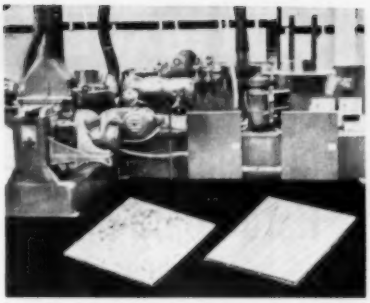
Specifications: Model S-25 belt sander has infinitely variable speeds from 20 to 60 FPM feed rates. The first two belts bring the stock to selected thickness and the third belt removes a minimum of stock, providing finish. Belts run over flexible cushioned shoe which can be varied in hardness. Automatic air-operated belt tracking mechanism assures proper oscillating motion. Handles stock as short as 6″ long and stock widths to 24″.

Manufacturer: Yates - American.

For more data, circle 410 on page 80

Machine Sizes Tile To Precision

Specifications: Jenkins Tile Sizing Machine allows one man to size 100 floor tiles per minute. Has two synchronized units, each equipped with two 7,200-rpm cope arbors which shape the four edges in a single pass. Plain, tongue and groove, shiplap and other type joints can be cut at speeds up to 120′ per minute. Dado attachments permit simultaneous surface grooving operations. Machine is hopper fed and transfer from first to second unit is automatic.



Manufacturer: Kohler-Joa Corp.

For more data, circle 411 on page 80

J. T. GOETHE LUMBER CO.
P. O. BOX 26
DUNNELLON, FLORIDA

Mr. Gordon Smith, Jr.
The Wheland Company
Chattanooga, Tennessee

Dear Mr. Smith:

I want to thank you for the way your people helped get our new Wheland equipment installed and running at top speed.

Your log deck equipment, low mill nigger and new Sturdi-30 carriage are just right for this mill. We have taken four men off the log deck and carriage and are using them in other places in the mill.

The finger tip controls for the sawyer le: him do their old jobs with a twist of the wrist. Your men have been helpful in giving the sawyer suggestions on handling the controls and he has constantly picked up speed. Our production has increased steadily and remarkably and we are cutting the most accurate lumber I have ever seen.

We are glad for visitors to see our new automatic Wheland equipment and learn how fast and accurate it is.

Very truly yours,

J. T. Goethe

J. T. Goethe

NEW WHELAND STURDI-30

(Patents applied for)

30″ opening for today's pine and light hardwood operations.

Modular Frame Construction saves weight, gives greater strength and speed.

ALSO 40″ OPENING

Sel-Set®

"4 men off log deck and carriage . . . production increased remarkably . . . most accurate lumber I have ever seen."
—J. T. Goethe

Authorized Sel-Set Distributor

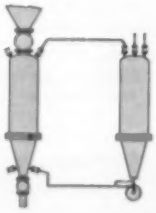
THE WHELAND COMPANY
CHATTANOOGA, TENNESSEE—PHONE AMherst 5-3181
MANUFACTURERS OF COMPLETE SAWMILLS AND AUXILIARY MACHINERY

CALL BAUER

To Upgrade Production in Insulation and Hard Board Mills (wet process)

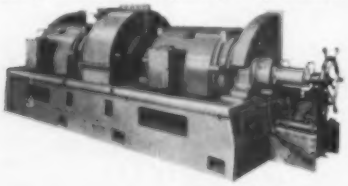
DIGESTERS

Sauer offers an efficient line of continuous and automatically controlled batch type digesters, for steaming or chemical treatment of chips.



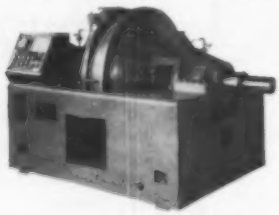
DOUBLE DISC REFINERS

For refining raw or treated chips and defibrated stock, producing board pulp to meet your specific quality requirements.



PUMP-THROUGH REFINERS

Used in the final refining stage, Pulp-Through Refiners provide better, more uniform stock, improving appearance and physical characteristics of boards. These high capacity units are excellent for dispersion of additives and blending.



CENTRI-CLEANERS

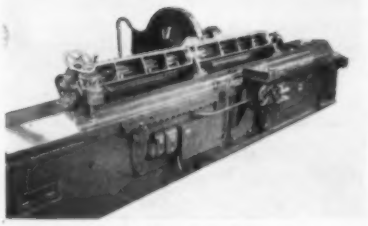
For removing foreign material ranging from tramp iron to bark, grit, dirt and shives from pulp. Centri-Cleaners improve board quality and appearance and help increase production.

Ask for descriptive literature.

THE BAUER BROS. CO.

Springfield, Ohio

In Canada:
The Bauer Bros. Co. (Canada) Ltd.,
Brantford, Ontario

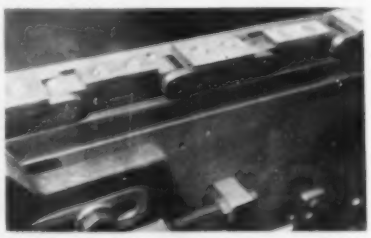


Grinder Adapted To Flake Knives

Specifications: Hanchett Model GK grinder is available equipped with straight grinding wheel and 110" knife bar for precision grinding of both faces of serrated knives used in disc flakers. Design includes automatic in-feed and retraction of grinding head to develop fine edge on recessed faces of knives. Spindle is high carbon steel mounted on ball bearings.

Manufacturer: Hanchett Mfg. Co.

For more data, circle 412 on page 80



Friction Plates Aid Track Through Sizing Saws

Specifications: Removable corrugated friction plates to help assure tracking of panel stock through trim or skinner saws are milled from solid bars of high tensile steel. Manufacturer says plates increase coefficient of friction between panel and chain by as much as 500% without marking stock, yet have the same or better life than standard chain corrugations.

Manufacturer: Kohler-Joa Corp.

For more data, circle 413 on page 80

Nylon Belt Polishes, Available in Various Grains

Specifications: Belts are made by spraying a slurry of grain (either aluminum oxide or silicon carbide) and a flexible adhesive on a non-woven random fibre nylon web. The web is laminated to a cloth backing and then fabricated into an endless belt. Available in grain sizes varying from coarse to super fine and in belt lengths to fit any belt sander.

Manufacturer: Coated Abrasives Division, Armour Alliance Industries.

For more data, circle 414 on page 80

Prentice to Handle Timesaver Sander Line

E. V. Prentice Co., Inc., Portland, Ore., has been appointed distributor for Timesaver Speedbelt Sanders, according to L. S. Sternal, sales manager of Timesavers Sanders, Inc., Minneapolis, Minn. Prentice will handle the entire Timesaver line including wide abrasive belt sanding and finishing equipment in furniture, woodworking and forest products industries, in Northern California, Oregon, Washington, Montana and Idaho.

For more data, circle 415 on page 80

READER SERVICE COUPON

For more PRODUCT INFORMATION, fill out this coupon and mail to:
THE LUMBERMAN, 731 S. W. Oak St., Portland 5, Oregon.
I am interested in new products described in the MACHINERY & SUPPLIES section, pages 76 through 80. Send information on items circled.

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412 413 414 415 416

Also, send me more information on products advertised on

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I UNDERSTAND THAT THERE IS ABSOLUTELY NO OBLIGATION FOR THIS SERVICE.
Please print or type the following:

Your name ..... Title or job .....

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This coupon for the July issue, good until August 15, 1961

THE LUMBERMAN'S 1961 DIRECTORY OF

Board Producers

- Hardboard
- Flakeboard
- Particleboard
- Insulating Board

HARDBOARD

ABITIBI CORP.
Home Address: Penobscot Bldg., Detroit, Mich.
Plant Address: Alpena, Mich.
Personnel: D. W. Ambridge, pres.; C. H. Rosier, vice-pres. & gen. mgr.; O. B. Eustis, mill mgr.; Paul Roberts, exec. vice-pres.; R. E. Paul, control supt.; Frank Eland, plant engr., R. M. Granum, plant supt.
Production: (Rated Annual Capacity): 200,000,000 sq. ft. ⅛" and ½" basis.
Rated Daily Capacity: 300 tons.
Process: S1S-Wet, S2S-Wet-Dry
Panel sizes: 4'x16'
Percent Into Cut-up Sizes: All standard sizes.
Thicknesses: S1S-1/12" to ¼"; S2S-⅛" to 5/16" inches.
Raw Material Used: Logs.
Volume (from logs): 80,000 tons annually.
Spec. Gravity: .80 to 1.14.
Colors: Cherry and walnut in Grainboard Panels.
Trade Name: Plateboard.
Uses: Residential, commercial and industrial.
Characteristics: S1S Hardboard, S2S Hardboard:
Percent of Product for Own Use: none.
Specialty Items: Tempered, prefinished, underlayment, overlayment, decorative, siding, V-groove, woodgrained.

ABITIBI POWER & PAPER CO. LTD.
Home Address: 408 University Ave., Toronto, Ontario, Canada
Plant Address: Sturgeon Falls, Ontario, Canada.
Personnel: D. W. Ambridge, pres.; R. E. Costello, gen-mgr. Panelboard Div.; F. T. Clarke, gen. supt.; A. W. Gray, gen. sls. mgr.; R. Schwinghamer, tech dir.; P. Rebin, plant engr.
Production: (Rated Annual Capacity): 61,600,000 sq. ft. ⅛" basis.
Process: S1S-wet.
Panel Sizes: All standard sizes.
Percent Into Cut-Up Sizes: variable.
Thicknesses: 1/12" to ¼" inches.
Raw Material Used: Wood pulp and and sawmill chips.
Spec. Gravity: 0.88 to 1.02.
Colors: Natural and woodgrains.
Uses: Industrial and building, underlayment, decorative specialties.
Percent of Product for Own Use: none.
Specialty Items: Tempered, underlayment, decorative, V-groove.

AMERICAN PACKAGE CORP.
Home Address: Conway, North Carolina.
Plant Address: Ampac Hardboard Co., Conway, N.C.
Personnel: Edwin P. Brown, Sr., pres.; R. E. Wicks, supt.; Edwin P. Brown, Jr., sls. mgr.; James Vinson, tech. dir.; Joe Smith, plant engr.
Production (Rated Annual Capacity): 100,000,000 sq. ft. ⅛" basis.
Rated Daily Capacity: 100 tons.
Process: Dry.
Panel Sizes: 4'x8' or 5'x8' (65"x100")
Percent Into Cut-Up Sizes: 75% est.
Thicknesses: 1/16" to 3/8" inches.
Raw Materials Used: Gum Chips.
Volume (mill residues): 20,000 tons; Volume (logs) 10,000 tons.
Spec. Gravity: .90 - 1.09.
Colors: light.
Trade Name: Ampac.
Uses: Furniture, veneer & plastic laminating, door skins.
Characteristics: S2S light color high density.
Percent of Product for Own Use: 30%
Specialty Items: Underlayment, overlayment, crossbanding for veneer & plastic laminating.
Sales Agents: Elof Hansson, New York.

ANACORTES VENEER INC., Hardboard Div.
Home Address: Anacortes, Wash.
Plant Address: Anacortes, Wash.
Personnel: G. A. Isaacson, pres.; T. L. Bentley, mgr.; Arthur C. Carlson, supt.; Robert L. Howlett, sls. mgr.
Production (Rated Annual Capacity): 36,000,000 sq. ft. ⅛" basis.
1960 Production: 18,000,000 sq. ft.
Rated Daily Capacity: 50 tons.
Process: Semi-dry.
Panel Sizes: 48x96.
Percent Into Cut-Up Sizes: 1%.
Thicknesses: ⅛, 3/16, ¼ inches.
Raw Materials Used: Douglas Fir, Hemlock.
Volume (mill residues): 7,500 tons annually.
Spec. Gravity: 1.02.
Colors: Golden.
Trade Names: Armorbord, Armortex.
Uses: Remanufacturing, underlayment, paneling, high pressure laminate stock, hardboard overlay on plywood.
Percent of Product for Own Use: 15%.
Specialty Items: Underlayment, overlayment, V-groove, perforated.

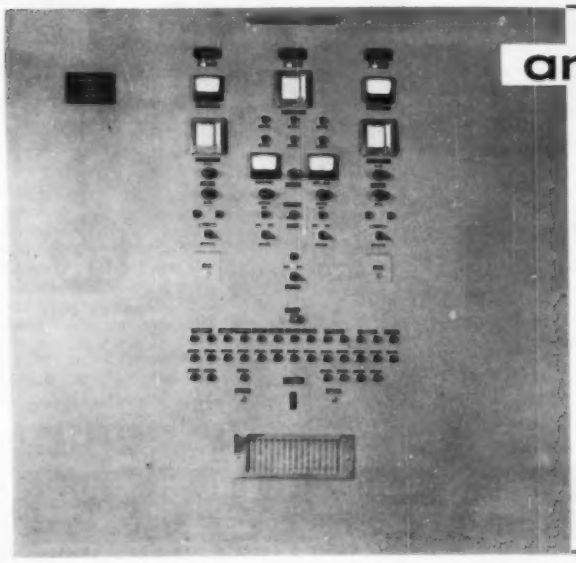
BOWATER BOARD CO.
Home Address: Catawba, South Carolina.
Plant Address: Catawba, South Carolina.
Personnel: A. B. Meyer, pres.; Dr. J. G. Meiler, mill mgr.; P. L. Kvale, supt.; J. R. Hahn, sls. mgr.; R. E. Nelson, tech. supt.
Production: (Rated Annual Capacity): 160,000,000 sq. ft. ⅛" basis.
Rated Daily Capacity: 175 tons.
Process: Bowater Air Process.
Panel Sizes: 4'x16'.
Thicknesses: ⅛, 3/16, 7/32, ¼ inches.
Raw Material Used: Hardwoods.
Spec. Gravity: .95 to 1.15.
Colors: Brown.
Trade Name: Bowater Board.
Uses: Industrial and distributor.
Characteristics: Smooth two sides.
Percent of Product for Own Use: none.
Specialty Items: Underlayment, standard, panel board.

CANADIAN FOREST PRODUCTS LTD., Pacific Veneer & Plywood Div.
Home Address: 999 West Pender St., Vancouver, B.C.
Plant Address: Ft. of Braid St., New Westminster, B.C.
Personnel: J. G. Prentice, pres.; D. M. Zilm, gen. supt.; George Burgon, supt. of Hardboard Plant; W. E. Burns, sls. mgr.
Production (Rated Annual Capacity): 90,000,000 sq. ft. ⅛" basis.
1960 Production: 93,995,424 sq. ft.
Rated Daily Capacity: 125 tons.
Process: Wet mat.
Panel Sizes: 48x96.
Thicknesses: 1/10, ⅛, 3/16, ¼, 5/16 inches.
Raw Materials Used: Plywood mill residue.
Volume (mill residues): 35,000 tons annually.
Spec. Gravity: .95.
Trade Names: PV Plank Board, PV Square-Tex, PV Coppertone, PV Aero Board.
Percent of Product for Own Use: None.
Specialty Items: Tempered, prefinished, underlayment, decorative, V-groove.

CASCADES PLYWOOD CORP.
Home Address: 1316 Public Service Bldg., Portland, Ore.
Plant Address: Lebanon, Oregon.
Personnel: C. W. Fox, pres.; J. R. Brande, mgr.; Tom Alley, supt.; Fran Phibbs, sls. mgr.; J. R. Stillinger, tech. dir.
Production: (Rated Annual Capacity): 100,000,000 sq. ft. ⅛" basis.
1960 Production: 61,250,000 sq. ft..
Rated Daily Capacity: 75 tons.
Process: Dry.
Panel Sizes: 4x8.
Percent Into Cut-Up Sizes: 30%.
Thicknesses: 1/10 to 3/8 inches.
Raw Material Used: Douglas fir chips.
Spec. Gravity: .9 to .115.
Colors: Beige.
Trade Names: Lebanite, Perfo Square; Perfo Round.
Uses: General.
Characteristics: Smooth two sides, light color.
Percent of Product for Own Use: 10%.
Specialty Items: Striated, T&G, prefinished, underlayment, overlayment, decorative, siding, V-groove.

EVANS PRODUCTS CO.
Home Address: Plymouth, Mich.
Plant Address: P.O. Box 651, Corvallis, Ore.
Personnel: Edward Evans, Jr., pres.; Piotv Zenczak, mgr. & tech. dir.; Earl Chapman, supt.; W. F. Ritchie, sls. mgr.
Production (Rated Annual Capacity): 40,000,000 sq. ft. ⅛" basis.
1960 Production: 33,000,000.
Rated Daily Capacity: 36-40 tons.
Panel Sizes: 4x4 and 4x8.
Percent Into Cut-Up Sizes: 5%.
Thicknesses: 1/10 - 9/32 inches.
Raw Materials Used: Douglas fir chips.
Volume (mill residues): 10,000 tons annually.
Spec. Gravity: 0.8 - 1.0.
Colors: Light blond.
Trade Name: Evanite.
Uses: Paneling, siding.
Characteristics: Smooth wear resistant hard surface.
Percent of Product for Own Use: None.
Specialty Items: Tempered, striated, T&G, prefinished, underlayment, decorative, siding, V-groove, prime-coated.

FOREST FIBER PRODUCTS CO.
Home Address: P.O. Box 68, Forest Grove, Ore.
Plant Address: Forest Grove, Ore.
Personnel: Harold A. Miller, pres.; Ray W. Replogle, vice pres.; George W. Wann, merch. mgr.; F. M. Hughes, mgr.; G. E. Tower, supt.; Henry B. Jacobsen, sls. mgr.; Keith Kruse, tech. dir.; Fred Kirby, asst. sls. mgr.
Production (Rated Annual Capacity): 66,000,000 sq. ft. ⅛" basis.
1960 Production: 49,500,000 sq. ft.
Rated Daily Capacity: 80 tons.
Process: Wet.
Panel Sizes: Up to 4'x16'.
Thicknesses: 1/10, ⅛, 3/16, ¼, 3/8, ¾ inches.
Raw Materials Used: Douglas fir wood.
Volume (mill residues): 20,000 tons annually.
Spec. Gravity: .75 to 1.05.
Colors: Sandalwood, green.
Trade Names: Forest Sandalwood.



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Trade Names: Forest Sandalwood, Thrif-tone, Tee-N-Gee, Forestex, Forall, 3/8" panel, Sandalite, Punched Board.
Uses: Wall paneling, siding, underlayment, displays, commercial and industrial.
Characteristics: Stain and abrasion resistant surface, easy to work, grainless product.
Specialty Items: Tempered, striated, T&G, prefinished, underlayment, decorative, siding, V-groove.
Percent of Product for Own Use: None.

GEORGIA-PACIFIC CORP.
Home Address: Equitable Bldg., Portland, Ore.
Plant Address: Coos Bay, Ore.
Personnel: Robert B. Pamplin, pres.; Armin A. Wehrle, gen. mgr. Fiber Products; Eugene Mobley, plant mgr.; Walter C. Walling, sls. mgr.
Production (Rated Annual Capacity): 100,000,000 sq. ft. 1/8" basis.
Rated Daily Capacity: 120 tons.
Process: Dry.
Panel Sizes: Up to 4'x16'.
Thicknesses: 3/32" to 3/8" inches.
Raw Materials Used: Douglas fir fiber.
Spec. Gravity: 0.90 to 1.12.
Colors: Light.
Trade Names: Plastic-core, Premium, Veneer-core, Garage-liner, Garage panel, Panelboard, Underlayment, cabinet panel, premium perforated.
Characteristics: Smooth both sides, high internal bond strength, excellent machining qualities.
Specialty Items: Striated, etched, prefinished, underlayment, V-groove, channel-groove, ship-lap, perforated.

HARDY & CO. INC.
Home Address: Box 246, Little Rock, Ark.
Personnel: Robert L. Hardy, Pres.

EDWARD HINES LUMBER CO.
Home Address: 200 S. Michigan Ave., Chicago 4, Ill.
Plant Address: Dee Div., P.O. Box 210, Hood River, Oregon.
Personnel: C. M. Hines, pres.; W. J. Runckel, mgr.; E. N. Jolly, supt.; D. N. Marti, sls. mgr.; H. M. Ely, tech. dir.
Production: (Rated Annual Capacity): 75,000,000 sq. ft. 1/8" basis.
1960 Production: 59,000,000 sq. ft.
Process: Wet.
Panel Sizes: 4x16 feet.
Percent Into Cut-Up Sizes: 5%.
Thicknesses: 1/8, 3/16, 1/4, 5/16 inches.
Raw Material Used: Wood chips.
Volume (mill residues): 20,000 tons annually.
Spec. Gravity: 0.95.
Colors: Light brown.
Trade Names: Allwood - Shobord - Weavebord, Shadobord, Louverbord, Nickerbord.
Uses: Home, furniture, automotive, design.
Percent of Product for Own Use: 1%.
Specialty Items: Tempered, striated, etched, prefinished, underlayment, decorative, siding, V-groove, primed, grained.

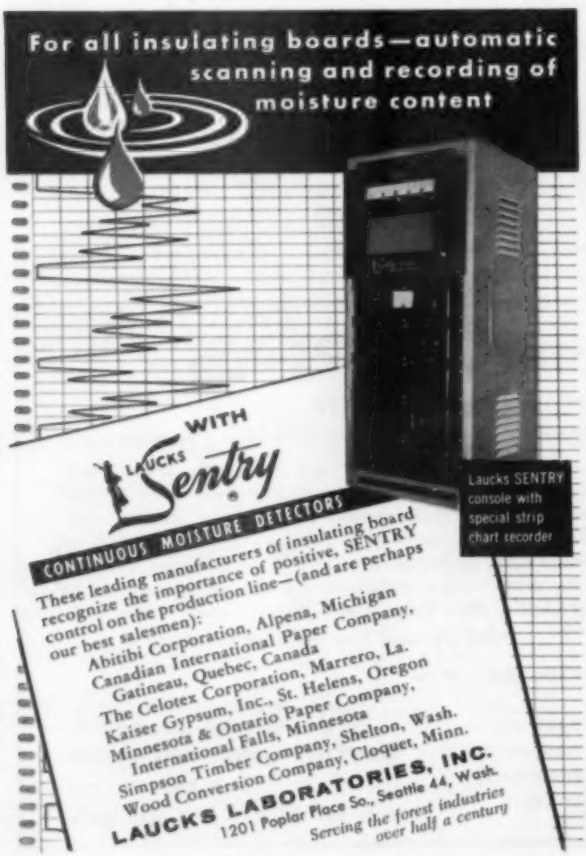
MASONITE CORP.
Home Address: 111 W. Washington St., Chicago, Ill.
Plant Address: Ukiah, Calif.
Personnel: John M. Coates, pres.; H. E. Nee, mgr., F. O. Marion, vice-pres. sls.; O. W. Frost, tech. dir.; W. A. Cotton, vice-pres. mfg.
Production: (Rated Annual Capacity): 1,400,000,000 sq. ft. 1/8" basis.
1960 Production: 1,131,800,000 sq. ft.
Rated Daily Capacity: 3,800,000 sq. ft. 1/8".
Process: Explosion—wet.
Panel Sizes: 4x16, 4x12, 4x18, 5x16 feet.
Percent Into Cut-Up Sizes: 10% est.
Thicknesses: 1/10, 1/8, 3/16, 1/4, 5/16, 7/16.
Raw Material Used: Chips & logs.
Volume (purchased chips): 197,537 units annually; Volume (from logs) 346,949 units annually.
Spec. Gravity: .85 to 1.20.
Colors: Natural - black.
Trade Names: Presdwood, Duolux.
Uses: Panel products for building & industry, maintenance, new construction, o.e.m. uses.
Characteristics: Versatile, hard, dense, uniform character, grainless, easily fabricated.
Percent of Product for Own Use: None.
Specialty Items: Tempered, striated, embossed, T&G, prefinished, underlayment, decorative, siding, V-groove.

MASONITE COMPANY OF CANADA, LTD.
Home Address: Sun Life Building, Montreal 2, Quebec
Plant Address: Gatineau, Hull County, Quebec
Personnel: P. A. Sargent, pres.; J. M. Coates, vice-pres.; J. C. Copeland, mgr.; L. Coffin, gen. supt.; K. W. Noble, mill engr.
Production (Rated Annual Capacity): 115,000,000 sq. ft.
Process: Fourdrinier Masonite
Trade Names: Masonite Presdwood, Quartrboard, Temprtile
Sales: International Panel Boards Ltd., Gatineau, Quebec.

NU-PLY CORP.
Home Address: Bemidji, Minn.
Plant Address: Bemidji, Minn.
Personnel: F. Russell Eggers, pres. & mgr.; Archie Gulsvig, supt.; Paul Barthelmy, sls. mgr.; Don Gould, tech. dir.; Don Hanson, plant engr.
Production (Rated Annual Capacity): 40,000,000 sq. ft. 1/8 inch basis
1960 Production: 28,000,000 sq. ft.
Rated Daily Capacity: 60 tons
Process: Dry felting
Panel Sizes: Up to 49x97½ inches
Percent Into Cut-Up Sizes: 30%
Thicknesses: 13/32 to 3/8 inches
Raw Material Used: Aspen pulpwood
Volume (from logs): 12,000 tons annually
Spec. Gravity: 1.02 to 1.12
Colors: Light
Trade Names: Bemidji-Bord, Temp-Bord, Tool - Bord, Door - Life, Door - Bord, Undr-Layr.
Uses: Walls, partitions, trailer, signs, displays, backing, laminating, furniture, cabinets, toys, underlayment, automotive siding.
Characteristics: Smooth both sides.
Percent of Product for Own Use: None
Specialty Items: Tempered, underlayment, siding, plastic backing, cross banding.

PANELBOARD MFG. CO.
Home Address: 222 Pacific St., Newark, N. J.
Plant Address: Newark, N. J.
Personnel: J. L. Parker, pres.; S. Portolana, supt.; I. R. Bennett, sls. mgr.
Trade Names: Paneltile, Gold-Plek
Specialty Items: T & G, prefinished.

SUPERWOOD CORP.
Home Address: 14th Ave. West &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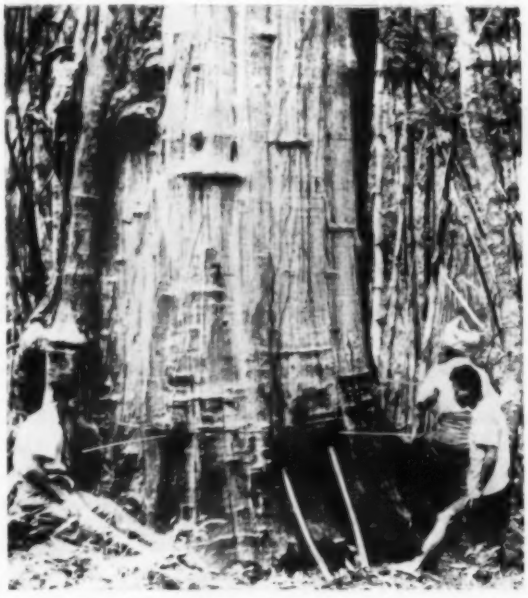

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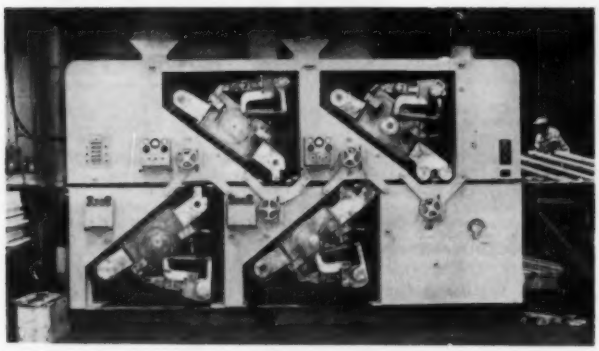

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Send today for complete details on the 2-belt or 4-belt SMITHWAY Sanders that are setting new records in primary and finishing sanding!

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✓ Greater versatility

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Waterfront, Duluth, Minn.
Plant Address: Duluth, Minn.
Personnel: M. J. Opsahl, pres.; Morris Lake, supt.; Robert L. Stephany, sls. mgr.; Lennart Egerstrand, tech. dir.
Production (Rated Annual Capacity): 180,000,000 sq. ft. 1/8" basis
1960 Production: 140,000,000 sq. ft.
Rated Daily Capacity: 175 tons
Process: Wet process, both continuous and batch forming
Panel Sizes: 4x8 and 4x16 ft.
Percent Into Cut-Up Sizes: 10%
Thicknesses: 1/12 to 5/16 inches
Raw Materials Used: Aspen and pine
Volume (from logs): 50,000 tons annually
Spec. Gravity: 1.00
Colors: Natural tan
Trade Name: Superwood.
Uses: Virtually all hardboard uses
Percent of Product for Own Use: None
Specialty Items: Tempered, underlayment, siding, V-groove.

THE TEMPRON FIBER CO.
Home Address: 600 S. Michigan Ave., Chicago 5, Ill.
Plant Address: El Paso, Texas
Personnel: J. F. T. Berliner, pres.; H. K. Linzell, mgr.; J. G. Stemples, sls. mgr.
Production (Rated Annual Capacity): 150,000 sq. ft. 1/8" basis
1960 Production: None
Process: Wet-Dry
Raw Material Used: Creosote Bush & Cotton Stalks
Trade Name: Tempron.
Specialty Items: Tempered, prefinished, decorative.

U. S. GYPSUM CO.
Home Address: 300 W. Adams St., Chicago, Ill.
Plant Address: Pilot Rock, Ore.
Personnel: G. J. Morgan, pres.; A. L. Rabb, mgr.; C. L. Walton, prod. mgr.; R. D. Stephen, vice-pres. sls.
Production (Rated Annual Capacity): 120,000,000 sq. ft. 1/8 and 1/2 inch basis.
Specialty Items: Tempering, prefinish
Trade Name: Duron

WEYERHAEUSER COMPANY, Silvatek Div.
Home Address: Tacoma, Wash.
Plant Address: Klamath Falls, Ore.
Personnel: Norton Clapp, pres.; R. D. Pauley, mgr.; N. J. Briggs, supt.; D. C. Greeley, sls. mgr.; A. M. Fisken, mgr. of mfg.; Dale Alter, plant engr.
Production (Rated Annual Capacity): 80,000,000 sq. ft. 1/8" basis
Process: Semi-dry process developed by Weyerhaeuser Co.
Panel Sizes: Up to 4x16 feet
Thicknesses: 1/12, 1/10, 1/8, 3/16, 1/4, 5/16 inches
Spec. Gravity: 0.9—1.1
Colors: Light tan and brown
Trade Names: Weytex, Weylite, Weyfair, Weybase, Weytone, Weycon
Uses: Building—walls, ceilings, floor underlayment, siding, cabinet work, decorative specialties; industry: furniture, automative, trailer, display.
Characteristics: Excellent machining, bendability, paint finishing, strength
Percent of Product for Own Use: None
Specialty Items: Tempered, striated, prefinished, underlayment, overlayment, decorative, siding, V-grooved, U-grooved, perforated, prime-coated, planed, flail sanded.
Sales Agents: Silvatek Div. and Roddis Div. of Weyerhaeuser Co. and authorized independent distributors, nationwide.

WISCONSIN WOOD PRODUCTS, INC.
Home Address: Phillips, Wisconsin
Plant Address: Phillips, Wisconsin
Personnel: Harry Gustafson, pres.; R. T. Miller, sls. mgr.; Earl Newman, tech. dir.; Victor Nielsen, plant engr.
Production (Rated Annual Capacity): 35,000,000 sq. ft. 1/8" basis
1960 Production: 28,000,000 sq. ft.
Rated Daily Capacity: 45 tons
Process: Dry
Panel Sizes: 4x8
Percent Into Cut-Up Sizes: 10%
Thicknesses: 1/10 to 5/16 inches
Raw Materials Used: Hardwood pulp
Spec. Gravity: .90—1.10
Colors: Light
Trade Name: Lionite.
Uses: Industrial and retail
Characteristics: High MOR, high internal bond, stability
Percent of Product for Own Use: None
Specialty Items: Tempered, underlayment, standard, panel, core board.

PARTICLEBOARD

ABERDEEN PLYWOOD & VENEERS, INC.
Home Address: P. O. Box 1036, Aberdeen, Wash.
Plant Address: Port Dock
Personnel: Monford A. Orloff, pres.; C. Calvert Knudsen, exec. vice-pres.; F. Dale Larmore, mgr. Flakeboard Div.
Plant proposed for construction in 1962

ABITIBI POWER & PAPER CO. LTD.
Home Address: 408 University Ave., Toronto, Ontario, Canada
Plant Address: Sturgeon Falls, Ontario, Canada
Personnel: D. W. Ambridge, pres.; R. E. Costello, gen. mgr., Panelboard Div., F. T. Clarke, gen. supt.; A. W. Gray, gen. sls. mgr.; R. Schwinghamer, tech. dir.; P. Rebin, plant engr.
Production (Rated Annual Capacity): 17,556,000 sq. ft. 5/8" basis
Process: Multiplatten
Panel Sizes: All standard sizes
Percent Into Cut-Up Sizes: Variable.
Thicknesses: 1/4" to 1 1/8" inches
Raw Material Used: Wood pulp
Spec. Gravity: 0.60
Colors: Natural
Trade Name: Platewood.
Uses: Core stock, decorative panels, construction
Percent of Product for Own Use: None
Specialty Items: Core stock, underlayment, cut-to-size, sheathing

AMERICAN OF MARTINSVILLE
Home Address: Starling Ave., Martinsville, Va.
Plant Address: Martinsville, Va.
Personnel: R. M. Simmons, pres.; R. L. Whitener, mgr.; W. E. Oakes, supt.
Production (Rated Annual Capacity): 10,000,000 sq. ft. 3/4" basis
1960 Production: 7,365,907 sq. ft.
Rated Daily Capacity: 45 tons
Process: Lanewood extruded board
Panel Sizes: Cut-to-size
Percent Into Cut-Up Sizes: 100%
Thicknesses: 3/4, 13/16, 17/16, 21/16 inches
Raw Materials Used: Wood chips
Volume (mill residues): 11,700 tons annually
Spec. Gravity: .65
Colors: Natural
Trade Name: Partick Board.
Uses: Core stock
Percent of Product for Own Use: 65%
Specialty Items: Core stock, Cut-to-size
Sales Agents: American Furniture Co.

THE BERKLINE CORP.
Home Address: Springfield, Mass.
Plant Address: Morristown, Tenn.
Personnel: Jacob Popkin, pres.; Howard Westhaver, mgr.; Clifford Rice, supt.; Mel Margolin, sls. mgr.; Don Cady, tech. dir.; Frank Magill, plant engr.
Production (Rated Annual Capacity): 1,800,000 sq. ft. 9/16" basis
1960 Production: 1,457,856 sq. ft.
Rated Daily Capacity: 90 tons
Process: Extrusion
Panel Sizes: 45" wide
Thicknesses: 9/16"
Raw Material Used: Oak chips
Volume (mill residues): 1640 tons
Spec. Gravity: .80
Colors: Natural
Uses: Veneered furniture parts
Percent of Product for Own Use: 65%
Specialty Items: Core stock, furniture stock, veneer overlay.

BROWNSVILLE PARTICLE BOARD AND ASSOCIATED PRODUCTS, INC.
Home Address: Brownsville, Oregon
Plant Address: Brownsville, Oregon
Personnel: Joseph E. Clark, pres. & mgr.; Richard S. Davis, supt.; James McCallen, tech. dir.

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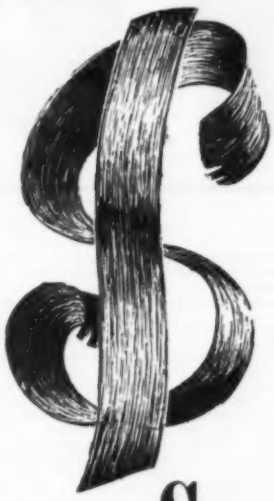

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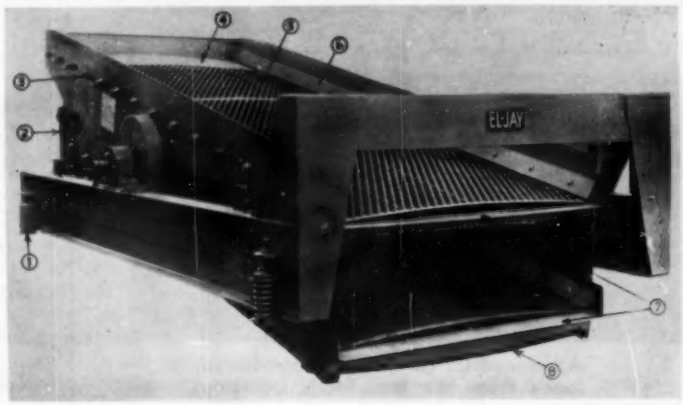

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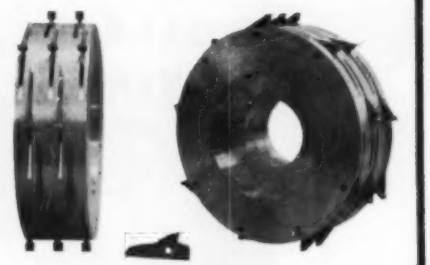


Production (Rated Annual Capacity): 15,000,000 sq. ft. ¾" basis
1960 Production: 9,500,000 sq. ft.
Rated Daily Capacity: 72 tons
Process: Dry—Multi-Platen
Panel Sizes: 48"x96"; 49½"x97½"
Percent Into Cut-Up Sizes: none
Thicknesses: ¼ to 1¼ inches
Raw Materials Used: Douglas Fir planer shavings.
Volume (mill residues): 17,280 tons annually
Spec. Gravity: .067
Trade Name: Neopar.
Uses: Core-furniture; underlayment, cabinet-sheathing
Characteristics: Homogeneous
Percent of Product for Own Use: None
Specialty Items: Core, furniture stock, underlayment, cabinet stock, sheathing
Sales Agents: Simpson Logging Co.

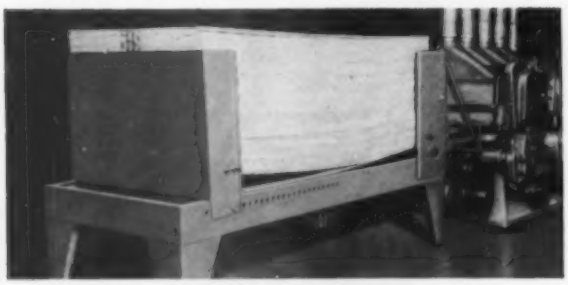
CAROLINA FOREST PRODUCTS INC.
Home Address: Box 1251, Wilmington, N. C.
Plant Address: King St.
Personnel: John Colucci, Jr., pres. & sls. mgr.; George E. Kidder, mgr.; Don McCallum, supt.
Production (Rated Annual Capacity): 7,000,000 sq. ft. ¾" basis
1960 Production: 5,000,000 sq. ft.
Process: Miller-Hofft
Panel Sizes: 5'x8' or smaller
Percent Into Cut-Up Sizes: 75%
Thicknesses: From 3/8 to 1½ inches
Raw Material Used: Pine planer shavings
Spec. Gravity: Air Dry Density; Dina-Shav 51#; Shav-Bond 47#
Trade Names: Dina-Shav and Shav-Bond
Uses: For plastic overlay in dinette field, three ply construction in furniture industry
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, paper and plastic overlay.
Sales Agents: Carolina Pacific Sales Inc., Wilmington, N. C.

CHAPWOOD, INC.
Home Address: P. O. Box 606, Philomath, Ore.
Plant Address: Philomath, Ore.
Personnel: Ralph Chapman, pres.; Dan Reynolds, mgr.; Oliver Widness, supt.; Marty Lemon, sls. mgr.; Floyd Champan, tech. dir.; Bob Wheeler, plant engr.
Production (Rated Annual Capacity): 8,000,000 sq. ft. ⅜" basis
Process: Chapman Multi-Platen
Panel Sizes: 4x8 feet
Percent Into Cut-Up Sizes: 10%
Thicknesses: 3/8, 1/2, 5/8, 3/4 inches
Raw Materials Used: Shavings
Trade Names: Chapwood Building Board Lami-Core
Uses: Underlayment, core, sheathing, cabinet, wall board
Characteristics: Fibre Clad, surfaces-smooth
Specialty Items: Core stock, underlayment, cut-to-size, paper or plastic overlay, cabinet stock, sheathing
Sales Agents: Timberlane Lbr. Co., Eugene; American Wood Products, NYC.

CLEAR FIR PRODUCTS OF OREGON LTD.
Home Address: P. O. Box 188, Springfield, Ore.
Plant Address: Springfield, Ore.
Personnel: W. H. Gonyea, pres.; Frank S. Clarke, mgr.; J. R. Nell, supt.; Jim Berwick, sls. mgr.; George Mohr, tech. dir. & plant engr.
Production (Rated Annual Capacity): 9,000,000 sq. ft. ¼" basis
1960 Production: 3,000,000
Rated Daily Capacity: 24 tons
Process: Own—Dry
Panel Sizes: 4x8 only
Percent Into Cut-Up Sizes: None
Thicknesses: ¼" only
Raw Materials Used: Planer and cut-up trim
Volume (mill residues): 5760 tons annually
Spec. Gravity: .95 to 1.05
Colors: Light tan or veneer color
Trade Names: Cleartex (Sand-Drift, Classic, Pleat-wood)
Uses: Wall panel, underlayment, utility hardboard applications
Characteristics: Smooth 2 sides. Phenolic bonded. Rigid, abrasion & impact resistant.
Percent of Product for Own Use: None
Specialty Items: Furniture stock, underlayment, veneer overlay, paper or plastic overlay, decorative, V-groove & V-plant, embossed panels
Sales Agents: Clear Fir Sales Co., Springfield, Ore.

COLLINS PINE COMPANY
Home Address: Terminal Sales Bldg., Portland, Oregon
Plant Address: Chester, Calif.
Personnel: Truman W. Collins, pres.; Elmer R. Goudy, mgr.; Alan C. Goudy, Flakeboard Div. mgr.; P. W. Foote, sls. mgr.; R. R. Grahlman,

CUT YOUR PANEL SANDING COST



Advanced Cardwell Automatic Feeder loads from the top, feeds non-stop!

Here's cost-cutting automation without complication. Cardwell harnesses gravity and friction to provide your panel sander a continuous, automatic feed . . . with no pit, no air or hydraulic connections, no complex adjustments. Virtually ALL stuck panels break loose cleanly, without risk of damage from rakes or pushers. Sets in 2 minutes for any panel length or thickness. Loads from the top by fork lift with no stopping. AND you save 50% in first cost! Write for facts.

The CARDWELL MACHINE COMPANY
Quality A CARDWELL TRADITION SINCE 1829
Franklin at 19th St. • Richmond 11, Virginia Telephone Milton 4-4593

GOSH!

Here's the finest paneling in the business. Low in cost, high in efficiency, truly beautiful . . .

Classic	$ 75.00/M
Birch	125.00/M
Knotty Pine	125.00/M
Ribbon Mahogany	125.00/M
Redwood	125.00/M
Sen	125.00/M

Contact your nearest Clear Fir Sales Co. representative

or

Clear Fir Sales Co.

P. O. Box 189 — Springfield, Oregon

Riverside 6-4481 TWX EG 3072

Asst. sls. mgr., Flakeboard Div.; Harry Demaray, tech. dir.; Everett Maxey, plant engr.
Production (Rated Annual Capacity): 24,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 120 tons
Panel Sizes: 4'x8' and 5'x10'
Thicknesses: ¼ to 1¼ inches
Raw Materials Used: Pine and fir
Colors: Natural
Uses: Furniture, core stock, cabinet stock, etc.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, cut-to-size, cabinet stock

COLUMBIA FOREST PRODUCTS, LTD.
Home Address: P. O. Box 1767, Seattle 11, Wash.
Plant Address: Sprague, Manitoba (Canada)
Personnel: Fred L. Johnson, pres.; Dale L. Schubert, gen. mgr.; E. T. Smythe, plant mgr.; D. L. Johnson, sls. mgr.; Wyman Williams, tech. dir.
Production (Rated Annual Capacity): 16,000,000 sq. ft. ¾" basis
Process: Industrial Development Co. Inc.
Spec. Gravity: .65
Colors: Light
Trade Name: Cedawood.
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, cabinet stock, prefill, fldor tile
Sales Agents: Columbia Hardbord Sales Co.

CROSSETT LUMBER CO.
Home Address: Crossett, Ark.
Plant Address: Crossett, Ark.
Personnel: H. S. Mersereau, mgr.; W. D. Morse, Jr., prod. mgr.; W. R. Purifoy, sales mgr.; Tom Walton, tech. dir.
Production (Rated Annual Capacity): 37,000,000 sq. ft. ¾" basis
Process: Medium density prepared shavings board—Behr process
Panel Sizes: 4' x 16'
Raw Materials Used: Gum

DIXIE CHIPBOARD CO.
Home Address: 427 West Randolph, Chicago, Ill.
Plant Address: P. O. Box 156, Rural Hall, N. C.
Personnel: T. J. Connelly, pres.; J. Grady Goldston, Jr., mgr.; Charles H. Pack, supt.; D. E. Schmidt, sls. mgr.
Production (Rated Annual Capacity): 5,000,000 sq. ft. ¾" basis
1960 Production: 4,000,000 sq. ft.
Rated Daily Capacity: 30 tons
Process: Kreibaum vertical extrusion
Panel Sizes: Any size required
Percent Into Cut-Up Sizes: 90%
Thicknesses: ½ to 2 inches
Raw Materials Used: Pine Planer Shavings
Volume (mill residues): 7500 tons annually
Spec. Gravity: 44-46 #cu. ft.
Uses: Core stock for furniture, desks, doors and interior partitions
Characteristics: Unique tubular board gives thickness without weight
Percent of Product for Own Use: None
Specialty Items: Core stock.

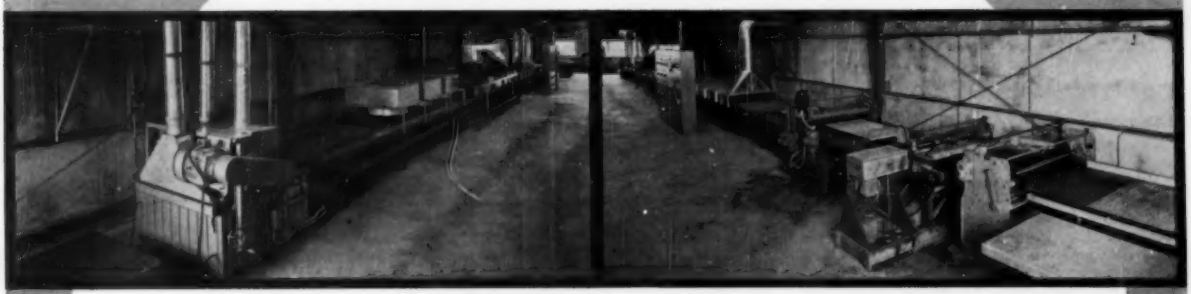
FLAKEBOARD COMPANY, LTD.
Home Address: Baehre Metallwerk K. A. Springe/Han, Germany
Plant Address: Milltown, N. B. Canada
Personnel: Friedrich Bahre, pres.; Ernst Greten, tech. dir. (Springe/Germany); Ellen Bahre, gen. mgr.; Donald Thompson, supt.; Gunter Bucking, plant engr. (Milltown); S. Kaye, gen. sls. mgr. (Montreal)
Production (Rated Annual Capacity): 10,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 35 tons
Process: Windsifted board Bahre-Bison (Germany)
Panel Sizes: 4'x16' and 5'x16'
Percent Into Cut-Up Sizes: 100%
Thicknesses: 5/16, 3/8, ½, 9/16, ⅝, 11/16, ¾, 1, 1⅛ inches
Raw Materials Used: Tamarack, Birch, Maple
Volume (from logs): 28 tons annually
Spec. Gravity: 0.650—40 lbs. cu. ft.
Colors: Natural
Trade Name: Rezflake
Uses: Furniture, construction, underlayment, laminates
Characteristics: Coarse flakes in center getting finer gradually to the surface
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, construction sheathing
Sales Agents: Flake Board Co. Ltd. Sales Div. Montreal

FORMICA CORP.
Home Address: 4614 Spring Grove Ave., Cincinnati 32, Ohio
Plant Address: Farmville, N. C.
Personnel: W. A. Smith, exec. vice-pres.; C. G. Reiter, mgr.; T. J. Canning, plant mgr.; A. L. Munsell, sls. mgr.; W. F. Drees, vice-pres.; J. A. Schinner, plant engr.
Production (Rated Annual Capacity): 40,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 28.4 tons
Process: Own 3-layer process
Panel Sizes: 24"x60" up to 48"x144"
Thicknesses: 3/8 to 1 3/16 inches
Raw Materials Used: Southern yellow pine cordwood
Volume (from logs): 50,000 tons at capacity
Spec. Gravity: 0.72
Colors: Natural
Trade Names: Formica Flakeboard
Uses: Underlayment for decorative Formica, furniture core, cabinet doors, store fixtures
Characteristics: 3-layer board smooth surface (veneered), excellent machining and strengths
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock
Sales Agents: Formica Corp. and its distributors

GRAY PRODUCTS CO. INC.
Home Address: Waverly, Va.
Plant Address: Waverly, Va.
Personnel: Elmon T. Gray, pres.; C. E. Crawford, mgr.; M. L. Watson, Sr., supt.; E. C. Dorsa, sls. mgr.; G. W. Doege, Jr., tech. dir.; W. L. Pate, plant engr.
Production (Rated Annual Capacity): ¾" basis

Experience Counts!

. . . ANOTHER GRENCO FIRST!



NOW —In addition to complete packaged finishing plants for PARTICLE BOARD, HARDBOARD and PLYWOOD PANELS, Grenco has also established a pilot production line for the evaluation of various processes. The investment in equipment for this purpose now exceeds $100,000.00.

THE PILOT PLANT—can run full sized panels from 12 to 80 FPM. Application equipment includes roller coating, reverse roller coating, curtain coating and airless spray. Drying equipment includes warm air convection, ceramic infra red ovens and wide belt sanders and flexible drum sanders.

FUTURE equipment evaluation will include flash jet, infrajet and flame-cure drying.

GRENCO INC.—by building this pilot plant has been able to evaluate for its customers new equipment, new coatings and new finishing techniques.

GRENCO INC. ENGINEERING · MANUFACTURING

For Further Information Wire, Phone or Write

GRENCO, INC.
2035 S. W. 58th Avenue
PORTLAND 1, OREGON
Phones: CA 6-4096
Cable address: GRENCO

1960 Production: 11 000,000 sq. ft:
Process: Miller Hofft, Platen type
Panel Sizes: 4x8, 4x10, 5x9, 5x10
Percent Into Cut-Up Sizes: 60%
Thicknesses: ½ to 1 3/16 inches
Raw Materials Used: Pine
Volume (mill residues): 4949.65 tons—Volume (from logs): 16222.89 tons
Spec. Gravity: Flakeboard .64 to .69; Particleboard .60 to .64
Colors: Neutral Pine
Trade Names: Graco Flakecore, Graco Standard
Uses: Core stock for veneer and decorative laminates, industrial uses and floor underlayment
Characteristics: Uniform homogeneous construction; double sanded, for close tolerance and smooth surface; tight edge that is easily machined or finished.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, forest mulch, wood flour.

HART WOOD PRODUCTS
Home Address: Hart, Mich.
Plant Address: Box 27, Hart, Mich.
Personnel: W. L. Tate, pres. & mgr.; Lyle Studer, supt.
Production (Rated Annual Capacity): 3,000,000 sq. ft. ¾" basis
1960 Production: 500,000 sq. ft.
Rated Daily Capacity: 20 tons
Process: Vertical Extruded Particle Board
Spec. Gravity: .42
Colors: Brown
Trade Name: Hart Line
Uses: Door cores, furniture panels, cupboard doors
Characteristics: Vertical Extruded
Specialty Items: Core stock, furniture stock, cut-to-size, veneer overlay, paper overlay, cabinet stock, 2" fluted petition stock, 1½"-1⅝" fluted door core—with lock blocks and nails.

INTERNATIONAL PAPER CO. Long-Bell Div.
Home Address: P. O. Box 1079, Longview, Wash.
Plant Address: Longview, Wash.
Personnel: R. C. Doane, NYC, pres.; T. A. Deal, mgr.; W. Kletsch, supt.; A. L. Mottet, tech. dir.; M. Peterson, plant engr., Longview; J. R. Scanlan, sls. mgr., Kansas City.
Production (Rated Annual Capacity): 20,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 50 tons
Process: Flakeboard
Panel Sizes: Standard 4x8. Cut-to-size on inquiry
Percent Into Cut-Up Sizes: 10%
Thicknesses: 3/32 to ¾"
Raw Materials Used: Douglas fir mill slabs and edgings
Spec. Gravity: .50 to 1.00
Colors: Various natural wood species
Trade Names: Flakewood, Flakewall, Ven-O-Wood, Long-Bell Flakeboard.
Uses: Decorative wall paneling, furniture parts, cabinet work, core stock, industrial parts
Characteristics: Durable, high strength, stable panels—plain & decorative.
Percent of Product for Own Use: 15%
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, paper or plastic overlay, cabinet stock, construction, sheathing, decorative, decorative flake overlay.
Sales Agents: National Company Offices

JASPER-AMERICAN MFG. CO.
Home Address: Henderson, Ky.
Plant Address: Henderson, Ky.
Personnel: Arnold F. Habig, pres.; Robert Golday, mgr.; Dick Lampert, sls. mgr.; H. E. Thyne, tech. dir.
Production (Rated Annual Capacity): 10,000,000 sq. ft. ¾" basis
1960 Production: 5,000,000 sq. ft.
Process: Kreibaum
Percent Into Cut-Up Sizes: 85%
Raw Materials Used: Pine
Volume (mill residues): 10,000 tons annually
Spec. Gravity: .6
Colors: Light
Trade Names: Stylemaster Chipcore
Uses: Plywood cores
Characteristics: Vertically oriented chips
Percent of Product for Own Use: 70%
Specialty Items: Core stock, furniture stock, cut-to-size, veneer overlay, cabinet stock
Sales Agents: The Jasper Corp., Jasper Stylemaster.

KROEHLER MFG. CO.
Home Address: Naperville, Ill.
Plant Address: Meridian, Miss.
Personnel: D. L. Kroehler, pres.; F. L. Myers, mgr.; Walter Johnson, supt.; C. C. Stewart, tech. dir.; E. McFarland, plant engr.
Production (Rated Annual Capacity): 7,300,000 sq. ft. ¾" basis
1960 Production: 3,000,000 sq. ft.
Rated Daily Capacity: 60 tons
Process: Emerite
Panel Sizes: 5'x10'
Percent Into Cut-Up Sizes: None
Thicknesses: ⅛ to 1 inch
Raw Material Used: Waste wood
Volume (mill residues): 6000 tons annually
Spec. Gravity: 35-55 #cu. ft.
Colors: Brown
Trade Names: Cultured Wood
Uses: Furniture core, dust panels and case backs
Characteristics: Fiberboard
Percent of Product for Own Use: 100%
Specialty Items: Core stock, furniture stock, cut-to-size, lumber banded panels.

THE LANE COMPANY INC.
Home Address: Altavista, Va.
Plant Address: Altavista, Va.
Personnel: H. O. Powell, pres.; B. B. Lane, mgr.; F. T. Holland, plant mgr.; E. W. Davidson, tech. dir.; R. T. Blanchard, plant engr.
Production (Rated Annual Capacity): 6,000,000 sq. ft. ¾" basis
1960 Production: 4,500,000 sq. ft.
Rated Daily Capacity: 25 tons
Process: Lanewood Extruded
Panel Sizes: 48" wide
Percent Into Cut-Up Sizes: All
Thicknesses: 9/16 to 21/16 inches
Raw Material Used: Dry kiln waste
Volume (mill residues): 6200 tons annually
Spec. Gravity: .65
Trade Names: Lanewood
Uses: Core stock
Characteristics: Extruded.
Percent of Product for Own Use: 98%
Specialty Items: Core stock, furniture stock, cut-to-size, veneer overlay, cabinet stock.

LESTER CEDAR PRODUCTS INC.
Home Address: Box 465, Sweet Home, Ore.
Plant Address: 1702 N. 18th St., Sweet Home, Ore.
Personnel: Mel Lester, pres., mgr. & sls. mgr.; Cecil Bridge, supt.; Wyman Williams, tech. dir.
Production (Rated Annual Capacity): 8,000,000 sq. ft. ½" basis
1960 Production: 1,500,000 sq. ft.
Process: Flakeboard—Alder & cedar
Panel Sizes: 64" x 124" down
Percent Into Cut-Up Sizes: 20%
Thicknesses: ¼" to 1½"
Raw Material Used: Cedar-Alder
Volume (mill residues): 2,200 tons; Volume (from logs) 4,500 tons
Colors: Natural
Trade Name: Cedawood
Uses: Home flooring, industrial flooring, underlayment, shelving, paneling, cabinets, furniture
Characteristics: Nice appearance, will not warp, good screw holding, water absorbent.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, cabinet stock, floor tile, decorative.
Sales Agents: Columbia Hardboard Sales, Seattle, Wash.

MacMILLAN, BLOEDEL AND POWELL RIVER LTD.
Home Address: Vancouver, B. C.
Plant Address: New Westminster, B. C.
Production (Rated Annual Capacity): 22,500,000 sq. ft. ¾-inch basis

NATIONAL STARCH & CHEMICAL CORP.
Home Address: 750-3rd Ave., New York 17, N. Y.
Personnel: F. Greenwall, pres.; W. Grubman, mgr.; D. Golante, supt.; A. G. Battagia, sls. mgr.; C. G. Caldwell, tech. dir.; P. F. Brusquini, A. Haigh, plant engrs.
Production (Rated Annual Capacity): 25,000,000 sq. ft. ¾-inch basis
Process: Flat platen—Miller Hofft—Columbia Engr.
Panel Sizes: 4x8, 5x8 feet
Percent Into Cut-Up Sizes: 50%
Thicknesses: 3/8—1 3/16 inches
Raw Material Used: Eastern white pine, Appalachian hardwoods
Spec. Gravity: .60-.75

Produce plywood?

Bemis offers you **free** engineering service to design...

Bemis PANEL-PAK is an efficient, low-cost system that's ideal for packaging plywood. Proof: A large plywood producer who switched from cartons to PANEL-PACKER system using Bemis Paper Specialty Bags achieves $150,000 a year in packaging savings. Other savings: warehousing costs down 20%, labor costs down 30%.

To find out how this versatile system can work for you, just let us know your packaging needs. We'll send a skilled, experienced packaging engineer to survey your plant, study your packaging requirements. He'll give you the whole factual story: cost data, floor space and labor savings. Plus a plan showing actual location of Bemis packaging system and illustrating how it can be integrated into your existing production line. All without obligation.

Trade Names: Granite Board, Parboard, Parflake
Uses: Core stock, underlayment
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, paper or plastic overlay.

PACQUA DIVISION
Pacific Plywood Co.
Home Address: P. O. Box 78, Dillard, Oregon
Plant Address: Dillard, Ore.
Personnel: William F. Forrest, pres.; William H. Cooke, mgr.; Ronald G. Frashour, asst. mgr.; John L. Perkins, sls. mgr.; Frank E. Kern, supt.; Leland Stadig, plant engr.
Production (Rated Annual Capacity): 50,000,000 sq. ft. 3/8" basis
1960 Production: 36,000,000 sq. ft. 3/8" basis
Rated Daily Capacity: 150 tons
Process: Particle type homogenous—own process
Panel Sizes: 4x8 ft. primarily; 4x9 to 4x12 edge glued
Percent Into Cut-Up Sizes: 20%
Thicknesses: ¼, 5/16, 3/8, ½, ⅝, ¾, 1 inches
Raw Materials Used: Douglas fir shavings
Volume (mill residues): 50,000 tons annually
Spec. Gravity: 0.64, 0.67, 0.72, 0.77, 0.88, 0.93
Colors: Natural
Trade Names: Par-wood, Par-tex, Par-tile, Par-deLux, 3-D, IRB, Quik Flour, Forrest Random Plank
Uses: Underlayment, siding, cabinets, core stock, soffits, sheathing, flooring, grain printing
Characteristics: Homogeneous composition and density throughout thickness.
Percent of Product for Own Use: 20%
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, cabinet stock, prefill & primed, floor tile, construction, sheathing, decorative, IRB (inset repellent board) all particleboard products, Partex (exterior particleboard), 3-D (vertical grooved panel siding).
Sales Agents: Plywood Service, Inc., Dillard, Ore.

PACK RIVER LUMBER CO.
Home Address: 205 Church St., Sandpoint, Idaho

POINSETT LUMBER & MFG. CO.
Home Address: Trumann, Ark.
Plant Address: Trumann, Ark.
Personnel: E. J. Stanley, supt. product engr.; J. A. Crozier, works mgr.; C. W. Reed, general supt.
Began operation in April 1960
Spec. Gravity: 40 and 45 lb. density
Percent of Product for Own Use: All

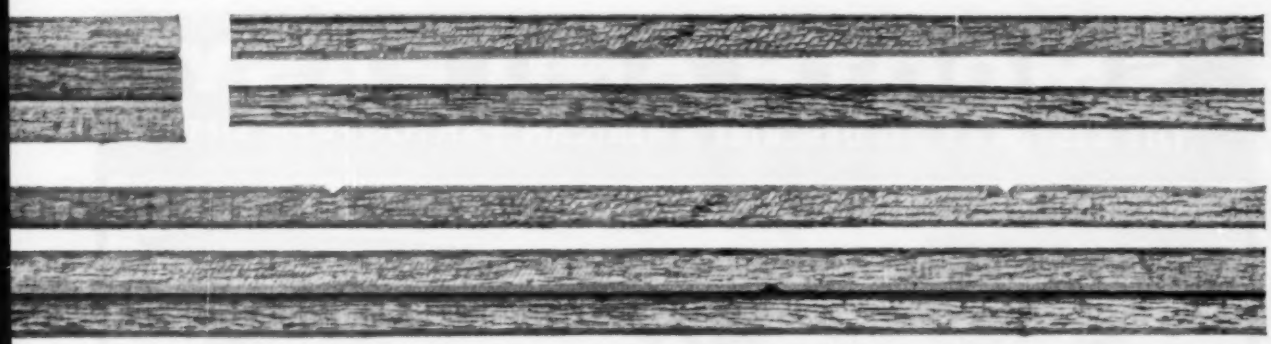
POPE & TALBOT, INC.
Home Address: 100 Bush St., San Francisco, Calif.
Plant Address: Oakridge, Ore.
Personnel: George A. Pope, Jr., pres.; E. N. W. Hunter, exec. vice-pres.; John W. Snyder, mgr.; Ralph G. Peinecke, supt.; Les Steers, sls. mgr.; Robert Crawford, tech. dir.; Frank Foyston, plant engr.
Production (Rated Annual Capacity): 12,000,000 sq. ft. ¾" basis
1960 Production: 10,600,000 sq. ft.
Rated Daily Capacity: 75 tons (finished)
Process: Miller-Hofft
Panel Sizes: Up to 54 x 144 inches
Percent Into Cut-Up Sizes: 50%
Thicknesses: ⅛ through 1¼ inches
Raw Material Used: Flakes and planer mill shavings
Volume (mill residues): 20,000 tons annually
Spec. Gravity: 0.55 to 0.80
Colors: Natural
Trade Names: Custom-Bord, Custom-Blend, Custom-Flake
Uses: Furniture, cabinets, sink & countertops, displays, partitions, doors, underlayment
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, prefill.

REXWOOD PRODUCTS, LTD.
Home Address: Box 159, New Liskeard, Ontario, Canada
Plant Address: New Liskeard, Ontario
Personnel: J. Corley Martin, pres. & sls. mgr.; Duncan R. Young, mgr. & supt.; Albert DeMezey, tech. dir.; P. J. Kelley, plant engr.
Production (Rated Annual Capacity): 10,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 60 tons
Process: Three layer type. Close control of flakes & layers
Panel Sizes: 5x10 ft.
Thicknesses: 3/16 to 1¼ inches
Raw Material Used: Softwood (small logs)
Spec. Gravity: Controlled—20# cu. ft. to 60# cu. ft.
Colors: Natural
Trade Name: Rexwood
Uses: Furniture trade, interior finish, core for veneer panels
Characteristics: High strength, smooth finish
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, construction.
Sales Agents: Elk Lake Lumber Co. Ltd.

ROCK ISLAND MILLWORK CO.
Home Address: 2525 4th Avenue, Rock Island, Ill.
Plant Address: Rock Island, Ill.
Personnel: E. A. Gerber, vice-pres. & gen. mgr.; Dave Haile, supt. & tech. dir.; H. S. Kettrick, sls. mgr.; Ralph Crespin, plant engr.
Production (Rated Annual Capacity): 30,000,000 sq. ft. ⅛" basis
1960 Production: 25,000,000 sq. ft.
Rated Daily Capacity: 50 tons
Process: Multi Platen
Panel Sizes: 49x97 inches
Percent Into Cut-Up Sizes: 10%
Thicknesses: 3/16, ¼, 9/32, 3/8, ½ inches
Raw Materials Used: Ponderosa pine residue
Volume (mill residues): 10,000 tons annually
Spec. Gravity: 1.0
Colors: Light tan
Trade Names: Resinwood, Resincore
Uses: Core for plastic overlay, work benches, spinning chucks, toys
Characteristics: High bonding strength, good machining surfaces and edges
Percent of Product for Own Use: 5%
Specialty Items: Core stock, furniture stock

SOUTHERN PLASWOOD CORP.
Affiliate of Emerite Corp., Jackson, Miss.
Home Address: Box 123, Hope, Ark.
Plant Address: Hope, Ark.
Personnel: W. W. Hollowell, pres.; E. J. Ogran, mgr. & sls. mgr.; R. L. Campbell, prod. supt. & plant engr.
Production (Rated Annual Capacity): 12,000,000 sq. ft. ¾" basis
1960 Production: 7,500,000 sq. ft.
Rated Daily Capacity: 40 tons
Process: Dry process particle (homogenous)
Panel Sizes: 49x97
Percent Into Cut-Up Sizes: 50%
Thicknesses: 3/8 to 1 5/16 in 1/16 increments
Raw Materials Used: Dry planer mill shavings
Volume (mill residues): 10,000 tons annually
Spec. Gravity: .69, .72, .75, .81, .94
Colors: Natural pine
Trade Names: Korstok, Chemwood
Uses: Core stock, furniture, core, dinette, panel stock, underlayment
Characteristics: Flat, homogenous panels, good machineability & internal bond
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, prefill, lumber edge banded Korstok, high density edge banded Korstok.

STORKLINE CORP.
Home Address: P.O. Box 492, Jackson, Miss.
Plant Address: Livingston Rd., Jackson, Miss..
Personnel: G. A. Huth, pres; G. F. Bracken, mgr.; W. M. Taylor, sls. mgr.; John E. Griffith, tech. dir.; G. H. Robinson, plant engr.
Production (Rated Annual Capacity): 2,080,000 sq. ft. ⅞" basis.
1960 Production: 1,789,038 sq. ft.
Rated Daily Capacity: 11.2 tons (1 shift)
Process: Multiplaten
Panel Sizes: 4x8 feet.
Percent Into Cut-Up Sizes: 100%
Thicknesses: ⅞"
Raw Materials Used: Southern hardwoods
Volume (mill residues): 2,563 tons annually
Spec. Gravity. .7
Colors: Natural
Trade Name: Nu-Tex
Uses: Core Stock



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Percent of Product for Own Use: 100%
Specialty Items: Core stock, furniture stock, veneer overlay, cabinet stock.

SUPERWOOD MULTIPLY PLANT
Home Address: 14th Ave. West & Waterfront, Duluth, Minn.
Plant Address: Virginia, Minn.
Personnel: M. J. Opsahl, pres.; Ray Krause, supt.; R. L. Stephany, sls. mgr.; Lennart Egerstrand, tech. dir.
Production (Rated Annual Capacity): 12,000,000 sq. ft. 3/8" basis.
1960 Production: 3,000,000 sq. ft.
Rated Daily Capacity: 38 tons daily
Process: Chapman flakeboard with fibre overlay
Panel Sizes: 4x8 ft.
Thicknesses: 5/8, 3/4 inches
Raw Materials Used: Aspen
Volume (from logs): 12,000 tons annually
Spec. Gravity: .75
Colors: Natural tan
Trade Name: Superwood Multiply Board
Uses: Underlayer, sheathing and general construction
Percent of Product for Own Use: None
Specialty Items: Underlayment, veneer overlay, paper or plastic overlay, cabinet stock, construction, sheathing, decking.

SWAIN INDUSTRIES INC.
Home Address: West Second St., Seymour, Ind.
Production (Rated Annual Capacity): 7,000,000 sq. ft. 1/2 inch basis

TENN-FLAKE CORP.
Home Address: Morristown, Tenn.
Plant Address: Morristown, Tenn.
Personnel: Lester Popkin, pres.; John M. Crafton, mgr.; Arthur Marburg, sls. mgr.
Production (Rated Annual Capacity): 20,000,000 sq. ft. 3/8" basis
Panel Sizes: 5x20 feet
Thicknesses: 1/2 to 1-3/16 inches
Raw Materials Used: Own preparation
Trade Name: Tenn-Flake
Uses: Furniture, sink tops, store fronts, fixtures, display, tables, wardrobes, partitions, cabinets, underlayments.
Characteristics: Integrated 3-layer board, smooth both sides.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, construction.

THOMASON CHIPBOARD CO.
Home Address: Fayetteville, N. C.
Production (Rated Annual Capacity): 4,000,000 sq. ft.

U. S. KORBOARD
Home Address: 120 Wall St., New York, N. Y.
Production (Rated Annual Capacity): 25,000,000 sq. ft. 3/4 inch basis

UNITED STATES PLYWOOD CORP.
Home Address: New York, N. Y.
Plant Address: P.O. Box 1688, Redding, Calif.
Personnel: S. W. Antoville, Chmn. of Bd.;Gene C. Brewer, pres.; (New York Office); K. L. Morrow, gen. mgr.; W. C. Smith, mgr. Particle Board Operations; D. N. McClary, prod. mgr.; M. Fuller and R. Moehl, supts; L. H. Boudreau, sls. mgr.; B. R. Jones, tech. dir.; V. E. Daniels, plant engr.
Production (Rated Annual Capacity): 90,000,000 sq. ft. 3/8" basis.
1960 Production: 64,678,000 sq. ft. 3/8" Rgh.
Process: Novoply 3-ply
Panel Sizes: 6x12 and 4x16 feet
Percent Into Cut-Up Sizes: 65%
Thicknesses: 3/4" thru 1 3/4" inclusive
Raw Materials Used: Douglas fir; White fir; Ponderosa pine; Southern pine chips for core; Douglas fir peeler cores for face shavings.
Volume (mill residues) 32,650 tons annually; Volume (from logs) 7,270 tons annually
Spec. Gravity: .62 to .71 (lower densities in panels over 1 1/4" thick.
Colors: Douglas fir shavings color
Trade Name: Novoply
Uses: Building construction (interior); sliding doors; folding doors; wall paneling; single wall partitions, furniture (as core stock and natural); sinks, desks.
Characteristics: Attractive mosaic surface appearance; very flat — warp free; high strength; water resistant. Also ideal as core stock without crossbanding. Many uses overlaid one side only.
Specialty Items: Core stock; furniture stock; cut-to-size; cabinet stock; prefill; decorative; machined sink deck cores; sliding and bifold doors; edge banded furniture cores.
Sales Agents: United States Plywood Corp. Branch Warehouses.

UNITED STATES PLYWOOD CORP.
Home Address: New York, N. Y.
Plant Address: P.O. Box 108, South Boston, Va.
Personnel: S. W. Antoville, chmn. of bd. Gene C. Brewer, pres. (New York office); K. L. Morrow, gen. mgr.; W. C. Smith, mgr. Particle Board Operations; R. M. Bailey, mgr.; N. Beatty, supt.; L. H. Boudreau, sls. mgr.; B. R. Jones, tech. dir.; Edward Morse, plant engr.
Production (Rated Annual Capacity): 60,000,000 sq. ft. 3/8" basis.
Process: Novoply
Panel Sizes: 5x16 feet
Percent Into Cut-Up Sizes: Est. 50-70%.
Thicknesses: 5/16" thru 1-3/16" inclusive
Raw Material Used: Southern Pine & Poplar
Volume: (from logs) 45,000 cords pulp logs/year
Spec. Gravity: .660
Colors: Southern Pine flake color
Trade Name: Novoply
Uses: Building construction (interior); sliding doors; folding doors; wall paneling; single wall partitions; furniture (as core stock and natural); sinks; desks.
Characteristics: Attractive mosaic surface appearance; very flat — warp free; high strength; water resistant. Also ideal as core stock without crossbanding. Many uses overlaid one side only.
Specialty Items: Core stock, furniture stock, cut-to-size, cabinet stock, prefill, decorative, machined sink deck cores, sliding and Bifold doors, edge banded furniture cores.
Sales Agents: United States Plywood Corp. Branch Warehouses.

VALLEY WOOD PRODUCTS, INC.
Home Address: P.O. Box 484, Sweet Home, Ore.
Plant Address: Sweet Home, Ore.
Personnel: C. Dean Johnson, pres., mgr. & sls. mgr.; Clifford O. Johnson, supt.
Production: (Rated Annual Capacity): 18,000,000 sq. ft. 3/8" basis.
Panel Sizes: 48x96
Thicknesses: 1/4 to 3/4 inches
Raw Material Used: Shavings
Trade Names: Westwood and Fiber-Tite.
Uses: Underlayment
Percent of Product for Own Use: None
Specialty Items: Underlayment
Sales Agents: Vancouver Plywood Co. and Fiddes-Moore & Co.

VIKO CORP.
Home Address: T. Baumritten Corp., New York, N. Y.

WABASH SCREEN DOOR CO., THE
Home Address: 310 S. Michigan Ave., Chicago, Ill.
Plant Address: 2222 S.E. Elm St., Minneapolis, Minn.
Production (Rated Annual Capacity): 4,000,000 sq. ft. 1/4 inch basis

WESTERN PANEL INC.
Home Address: 1400—18th Ave., Sweet Home, Ore.
Production (Rated Annual Capacity): 6,000,000 sq. ft. 5/8 inch basis

WEST VIRGINIA PULP & PAPER CO.
Home Address: Tyrone, Pennsylvania
Plant Address: Pennsylvania Ave., Tyrone, Pa.
Personnel: David L. Luke, pres.; J. Lynne Ferner, mgr.; John W. Churchill, supt.; John W. Holdsworth, sls. mgr.; Charles R. Morschauser, tech. dir.; John H. Crist, plant engr.
Production (Rated Annual Capacity): 20,000,000 sq. ft. 3/8" basis
1960 Production: 10,860,000 sq. ft.
Process: Westvaco
Panel Sizes: 4x8 and cut-to-size
Thicknesses: 3/8 to 1 1/8 inches
Raw Materials Used: Aspen
Volume (from logs): 180,000 tons annually
Spec. Gravity: .63
Colors: White
Trade Names: Westvaco Flakeboard,

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Westvaco Dureen
Uses: Kitchen cabinets, furniture, core stocks, plastic fabrications, store displays, wall partitions.
Characteristics: Tight edges, light color, high MOR and MOE
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, cut-to-size, veneer overlay, paper or plastic overlay, cabinet stock, hardboard overlays.

WEYERHAEUSER COMPANY, Silvatek Div.
Home Address: Tacoma, Wash.
Plant Address: West Memphis, Arkansas
Personnel: Norton Clapp, pres.; R. D. Pauley, mgr.; Merlyn Hemphill, supt.; D. C. Greeley, sls. mgr.; A. M. Fisken, mgr. of mfg.
Production (Rated Annual Capacity): 9,000,000 sq. ft. ¾" basis.
Process: Multi-platen
Panel Sizes: 48x96, 56x196 inches
Thicknesses: ½ to 1-3/16 inches
Spec. Gravity: .64
Colors: Light tan
Trade Names: Versaflake, Versabase
Uses: Core stock for furniture & store fixtures, dinettes, doors, cabinets, floor underlayment.
Characteristics: High strength & stiffness, smooth surface, tight edge, excellent machinability, solid construction.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, cabinet stock, prefill, construction.
Sales Agents: Silvatek Div. and Roddis Div. of Weyerhaeuser Co. and authorized independent distributors, nationwide.

WEYERHAEUSER COMPANY, Silvatek Div.
Home Address: Tacoma, Wash.
Plant Address: Arcata, Calif.
Personnel: Norton Clapp, pres.; R. D. Pauley, div. mgr.; K. R. Cooper, mgr.; Roy Hunt, supt.; R. L. Rinde, sls. mgr.; Robert K. Molloy, works mgr.; H. Pagel, tech. dir.
Production (Rated Annual Capacity): 30,000,000 sq. ft. ¾" basis
1960 Production: 20,000,000 sq. ft.
Rated Daily Capacity: 100 tons
Process: Behr
Panel Sizes: 51 x 192 inches
Percent Into Cut-Up Sizes: 50%
Thicknesses: ⅜ to 1½ inches
Raw Material Used: Douglas fir flakes
Volume (mill residues): 63,000 tons annually
Spec. Gravity: .63
Colors: Tan
Trade Names: Timblend
Uses: Core stock for furniture and fixtures; counter tops and cabinet parts, hardwood paneling, fire retardant core for doors and paneling.
Characteristics: Sandwich construction giving high strength and stiffness; exceptionally smooth surface; tight edge; excellent machinability; solid construction.
Percent of Product for Own Use: 2%
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay, paper or plastic overlay, cabinet stock, prefinish, prefill, construction, Phenolic, Termite Repellent, Tigaclad.
Sales Agents: Silvatek Div. and Roddis Div. of Weyerhaeuser Co. and authorized independent distributors, nationwide.

WEYERHAEUSER COMPANY, Silvatek Div.
Home Address: Tacoma, Wash.
Plant Address: North Bend, Ore.
Personnel: Norton Clapp, pres.; R. D. Pauley, mgr.; C. E. Goll, supt.; D. C. Greeley, sls. mgr.; A. M. Fisken, mgr. of mfg.; Howard Carrels, plant engr.
Production: (Rated Annual Capacity): 20,000,000 sq. ft. ¾" basis
Process: Miller-Hofft multi-platen
Panel Sizes 4x8 up to 4x12 feet
Thicknesses: ⅜ to 1inch
Raw Material Used: Green shavings
Spec. Gravity: .64
Colors: Natural light, uniform
Trade Names: Versabord, Edge-Loc Versabord
Uses: Floor underlayment, counter tops, cabinet parts, shelving, closet doors, wall paneling, core stock for furniture and fixtures.
Characteristics: Sanded two sides, smooth surface, uniform thickness, solid construction, indentation, warp and moisture resistant.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, construction.
Sales Agents: Silvatek Div and Roddis Div. of Weyerhaeuser Co. and authorized independent distributors, nationwide.

WOODCORE INC.
Home Address: Box 45, Scottdale, Pa.
Plant Address: Scottdale, Pa.
Personnel: Irving L. Halsted, pres.; Kenton J. Halsted, mgr.; Albert Locher, tech. dir.
Production (Rated Annual Capacity): 350,000,000 sq. ft. ⅜" basis.
1960 Production: 100,000,000 sq. ft.
Rated Daily Capacity: 15 tons
Process: Chipcraft Extrusion
Panel Sizes: 4' wide up to 12' long
Percent Into Cut-Up Sizes: 25%
Thicknesses: ⅝ to 1½ inches
Raw Material Used: Hardwoods
Volume (mill residues): 350 tons annually
Trade Names: ScotBord
Uses: Core stock
Characteristics: Hardwood extruded
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, veneer overlay.

WOOD FIBERBOARD CO
Home Address: P.O. Box 245, Albany, Ore.
Plant Address: Albany, Ore.
Personnel: William Swindells, Sr., pres.; Irvin Wentworth, mgr.; Thomas Moore, supt.; W. W. Affolter, sls. mgr.; George Swindells, Asst. sls. mgr.; Warren Saltz, sales engr.
Production (Rated Annual Capacity): 30,000,000 sq. ft. ¾" basis
Rated Daily Capacity: 125 tons
Process: Bison system air flotation
Panel Sizes: 5x16 feet maximum
Percent Into Cut-Up Sizes: 40%
Thicknesses: ⅜, ½, ⅝, 11/16, ¾, 1, 1⅛, 1-3/16 inches
Raw Material Used: Wood shavings and flakes
Volume (mill residues): 45,000 tons annually
Spec. Gravity: 0.64 to 0.8
Colors: Natural
Trade Names: Duraflake
Uses: Furniture, cabinets, doors, floor underlayment
Characteristics: Fine surface, excellent screw holding, high internal bond.
Percent of Product for Own Use: None
Specialty Items: Core stock, furniture stock, underlayment, cut-to-size, cabinet stock, construction, decorative.

WYNNEWOOD PRODUCTS CO.
Home Address: P.O. Box 8105, Dallas, Texas
Plant Address: P.O. Box 1088, Jacksonville, Texas
Personnel: Angus G. Wynne, Jr., pres.; K. N. Stordalen, gen. mgr.; R. R. Bridges, supt.; E. H. Williams, sls. mgr. Southern territory; C. G. Mathis, tech. dir.
Production: (Rated Annual Capacity): 12,000,000 sq. ft. ¾" basis
1960 Production: 9,069,360 sq. ft.
Process: Own
Panel Sizes: 4x8 feet
Percent Into Cut-Up Sizes: 60%
Thicknesses: ⅜ to 1¾ inches
Raw Material Used: Southern pine
Volume (mill residues): 24,000 tons annually
Spec. Gravity: 0.512; 0.720; 0.849; 1.000
Colors: Light
Trade Names: Corstoc, Arcatex, Wynnewood 601 & 60F, Wynnewood Finecor, Wynnewood Finetex, Dorcor
Uses: Furniture, solid core doors, partitions.
Characteristics: Seven types designed for particular end uses.
Specialty Items: Core stock, furniture stock, cut-to-size, veneer overlay, cabinet stock, construction, DORCOR: up to 1¾" for solid door cores & partitions: WYNNEWOOD 601: school & laboratory tops; WYNNEWOOD 60F: one-shot high pressure laminates.
Sales Agents: L-M Forest Products, Grand Rapids, Mich.; Leroy Glaze Lbr. Co., Shelbyville, Ind.; Damiani Plywood-Lbr. Co., Chicago, Ill.; American Wood Products, Bayside 61, N.Y.

INSULATION BOARD

ABITIBI CORP.
Home Address: Penobscott Bldg., Detroit, Mich.
Plant Address: Alpena, Mich.
Personnel: D. W. Ambridge, pres.; C. H. Rosier, vice-pres. & gen mgr.; O. B. Eustis, mill mgr.; Paul Roberts, exec. vice-pres.; R. E. Paul, control supt.; Frank Eland, plant engr.
Production (Rated Annual Capacity): See Hardboard Listing
Rated Daily Capacity: See Hardboard Listing
Process: Wet
Panel Sizes: All standard sizes
Thicknesses: ⅜" up to 4 inches
Raw Material Used: Logs
Spec. Gravity: .22 to .36
Uses: Residential, commercial and industrial
Percent of Product for Own Use: none
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile, siding.

ALLIED CHEMICAL CORP. Barrett Div.
Home Address: 61 Broadway, New York 6, N. Y.
Plant Address: Dubuque, Iowa
Personnel: H. Dorn Stewart, pres.; H. W. Beuscher, plant mgr.; R. E. Oldendorph, supt of operations; W. D. Herbert, marketing mgr.; J. N. Cosby, dir. of research; L. H. Keesey, plant engr.
Production (Rated Annual Capacity): 75,000,000 sq. ft. ½" basis

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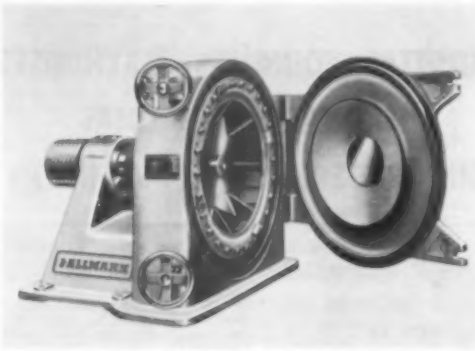

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Process: Semi-Chemicals — Pandia Digestors
Panel Sizes: Random
Percent Into Cut-Up Sizes: 100%
Thicknesses: 5/16, 3/8, 1/2, 25/32 inches
Raw Materials Used: Pulpwood
Volume (from logs): All
Trade Names: Barrett, Rigidwall, Barretone, Vinyl-Coustic
Uses: Exterior sheathing, ceiling tile, interior finish, roof insulation
Percent of Product for Own Use: none
Specialty Items: Asphalt coatings; tongue and groove; prefinish

ALLIED CHEMICAL CORP., Barrett Div.
Home Address: New York 6, N.Y.
Plant Address: Sunbury, Penn.
Personnel: H. Dorn Stewart, Pres.; J. I. Geary, plant mgr.; W. D. Herbert, marketing mgr.; J. N. Cosby, dir. of research; E. E. Wilson, plant engr.
Production (Rated Annual Capacity): 100,000,000 sq. ft. 1/2" basis.
Process: Semi-Chemicals; Pandia Digestors
Panel Sizes: Random
Percent Into Cut-Up Sizes: 100%
Thicknesses: 5/16, 3/8, 1/2, 25/32 inches
Raw Materials Used: Pulpwood
Volume (from logs): All
Trade Names: Barrett, Rigidwall, Barretone, Vinyl-Coustic
Uses: Exterior sheathing, ceiling tile, interior finish, roof insulation
Percent of Product for Own Use: None
Specialty Items: Tongue and groove; prefinish, asphalt coatings

ARMSTRONG CORK CO.
Home Address: Lancaster, Pa.
Plant Address: Macon, Ga.
Personnel: C. J. Backstrand, Pres.; Kenneth O. Bates, Exec. V-P.; M. J. Warnock, First Senior V-P; J. O. Sampson, Mgr., Lumber Dealer Sales; E. A. Worm, Jr., Plant Mgr.
Trade Names: Cushiontone—acoustical ceiling tile; Temlok—sheathing, decorator tile, roofing and equipment insulation.

ARMSTRONG CORK CO.
Home Address: Lancaster, Pa.
Plant Address: Pensacola, Fla.
Personnel: C. J. Backstrand, Pres.; Kenneth O. Bates, Exec. V-P.; M. J. Warnock, First Senior V-P; J. O. Sampson, Mgr., Lumber Dealer Sales, E. N. Lee, Plant Mgr.
Trade Names: Acoustical Fire Guard, Crestone, Minaboard, Minatone — acoustical ceiling products.

CELOTEX CORP., THE
Home Address: 120 S. LaSalle St., Chicago 3, Ill.
Plant Address: Marrero, La.

CELOTEX CORP., THE
Home Address: 120 S. LaSalle St., Chicago, Ill.
Plant Address: P.O. Box 86, L'Anse, Mich.
Personnel: Henry Collins, pres.; F. J. Alfeis, mgr.; A. O. Wirtanen, supt.; A. H. Philipp, tech. dir.; R. C. Roberts, plant engr.
Production: (Rated Annual Capacity): 150,000,000 sq. ft. 1/2" basis.
Rated Daily Capacity: 200 tons.
Process: Fourdrinier.
Panel Sizes: Varied.
Raw Material Used: Mixed hardwood & Aspen.
Volume (from logs): 35,000 tons annually.
Trade Names: Celotex.
Uses: Building Materials.
Percent of Product for Own Use: None.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile.

DIERKS FORESTS, INC.
Home Address: 810 Whittington Ave., Hot Springs, Ark.
Plant Address: Craig, Oklahoma.
Personnel: W. C. Slater, Jr., supt.; Gene H. Thompson, sls. mgr.; John F. Campbell, tech. dir.; Larry Stevens, plant engr.
Production (Rated Annual Capacity): 65,000,000 sq. ft. 1/2" basis.
Rated Daily Capacity: 100 tons.
Process: Unifiber.
Thicknesses: 3/8 to 3 inches.
Raw Materials Used: Pine Chips.
Volume (mill residues): 31,200 tons annually.
Percent of Product for Own Use: None.
Specialty Items: Roof Insulation, V-Groove.

FLINTKOTE CO.—Canoe Plant
Home Address: Los Angeles, Calif.
Plant Address: Hilo, Hawaii.
Production (Rated Annual Capacity): 130,000,000 sq. ft. 1/2-in. basis.

THE FLINTKOTE COMPANY
Home Address: 30 Rockefeller Plaza, New York 20, N. Y.
Plant Address: Meridian, Miss.
Personnel: G. J. Pecaro, pres.; Glenn Ball, mgr.; E. Wheeler, Jr., sls. mgr.; R. H. Cubberley, tech. dir.
Production (Rated Annual Capacity): 200,000,000 sq. ft. 1/2" basis.
1960 Production: 150,000,000 sq. ft.
Rated Daily Capacity: 225 tons.
Process: Fourdrinier.
Panel Sizes: 12"x12" to 4'x10'.
Thicknesses: 3/8" to 3".
Raw Materials Used: Pine pulp wood.
Volume (from logs): 70,000 tons annually.
Spec. Gravity: 12-18 lbs. cu. ft.
Colors: varies.
Characteristics: Insulation, structural, decorative.
Percent of Product for Own Use: 10%.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile, V-groove.
Sales Agents: Flintkote District Sales Offices.

HOMASOTE CO.
Home Address: P.O. Box 441, Trenton, N.J.
Plant Address: Trenton, N.J.
Personnel: B. Outerbridge, pres.; T. A. Pierson, Jr., vice-pres.; F. V. Wilson, Jr., vice-president sls.; A. N. Harvey, sls. mgr.; F. P. Richards, supt.; F. R. Valentine, tech. dir.; J. D. Herron, plant engr.
Production (Rated Annual Capacity): 150,000,000 sq. ft. 1/2" basis.
1960 Production: 90,000,000 sq. ft.
Rated Daily Capacity: 250 tons.
Process: Special.
Panel Sizes: Up to 8x14 ft.
Uses: Building and Industrial.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, siding, V-groove.

JOHNS-MANVILLE CORP.
Home Address: 22 East 40th St., New York, N.Y.
Plant Address: Natchez, Miss.

JOHNS-MANVILLE CORP.
Home Address: 22 East 40th St., New York, N.Y.
Plant Address: Klamath Falls, Oregon.

JOHNS-MANVILLE CORP.
Home Address: 22 East 40th St., New York, N.Y.
Plant Address: Jarrett, Va.

KAISER GYPSUM CO., INC.
Home Address: Kaiser Center, Oakland, Calif.
Plant Address: St. Helens, Ore.
Production (Rated Annual Capacity): 120,000,000 sq. ft. 1/2-inch basis.

MacANDREWS & FORBES CO.
Home Address: Camden 4, N.J.
Plant Address: 3rd St. & Jefferson Ave., Camden 4, N.J.
Personnel: R. M. Bickerstaff, Jr., pres.; B. H. Gominger, mgr.; R. W. Shaffer, supt.; R. M. McWade, sls. mgr.; C. K. Swift, tech. dir.; W. A. Watkins, plant engr.
Production: (Rated Annual Capacity). 36,000,000 sq. ft. 1/2" basis.
1960 Production: 31,000,000 sq. ft.
Rated Daily Capacity: 38 tons.
Panel Sizes: 4x6, 8, 9, 10 — 2x8.
Percent Into Cut-Up Sizes: 15%.
Thicknesses: 3/8, 1/2 25/32 inches.
Raw Material Used: Licorice root, pine, paper stock.
Volume (from logs): 600 - 1000 tons annually.
Spec. Gravity: 18.0.
Colors: Brown.
Trade Names: Maftex, Lockaire.
Uses: Sheathing, roofboard, shingle backer.
Percent of Product for Own Use: None.
Specialty Items: Structural, roof insulation, V-groove, backer board.
Sales Agents: Maftex Insulation Board Sales Co. and Plastergon Wallboard Co.

MINNESOTA & ONTARIO PAPER CO., Insulite Div.
Home Address: 500 Investors Bldg., Minneapolis 2, Minn.

CLAYTON "STEAM ON DEMAND"

SPEEDS PLYWOOD PRODUCTION

The Clayton steam generator maintains constant uniform press temperature throughout curing cycle. Gives instant response to load demand — with no platen temperature fluctuations, no time loss for temperature recovery. "Steam on demand" means faster production, fewer rejects. For details, write to:

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15 lb SQUEEZE GRIP CO^2 FIRE EXTINGUISHERS

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Complete with hose and horn. Manufactured by CO^2 Company, Kiddie, and other prominent manufacturers.

As above, but with turn valve in place of squeeze grip . . . $20.00 ea.

As removed from Surplus Navy Vessels and Liberty Ships. F.O.B. Portland, Oregon.

Contact: Ralph E. Ingram

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3121 S.W. Moody

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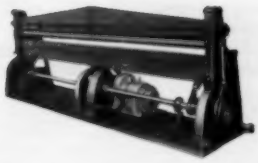
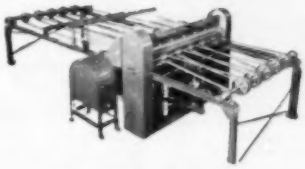
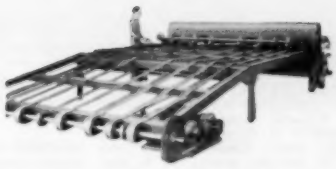
THE SPEED AND EFFICIENCY OF A COE CLIPPER

Cut Dollars Off of Veneer Production Costs







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PAINESVILLE, OHIO PORTLAND, OREGON

A General Appraisal saves its cost many times over in the first 5 minutes of a fire loss adjustment. Its detailed record of assets provides for proper insurance coverage, eliminates over or under-insuring, and is recognized as authoritative evidence for proof of loss in case of fire. For further information, contact

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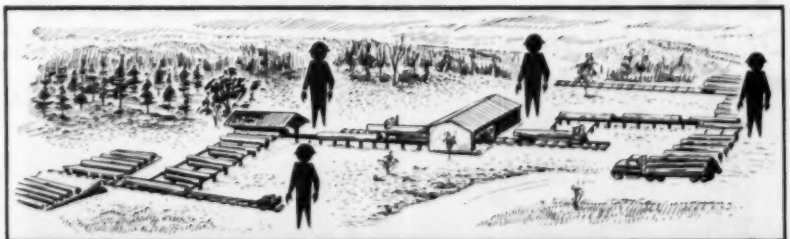

can you operate YOUR pole plant WITH ONLY FOUR MEN?

The answer is YES, if you use the NELSON SYSTEM of POLE PROCESSING

For a *free* analysis of how the Nelson System will fit your operation, just send a layout of your present plant.

If you would like a free copy of the brochure showing the Nelson System, please write the factory.

NELSON Electric MANUFACTURING CO.

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Permatag
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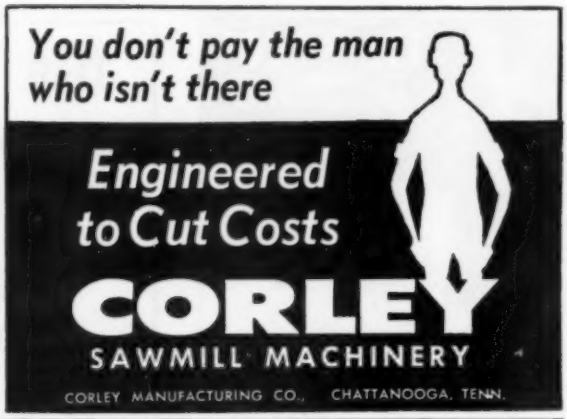
FOR POSITIVE IDENTIFICATION
Many mills are using Permatags to record scaling and other data. Tag is stapled in place and removed before sawing for accounting purposes. Other uses include labeling stacks, shipping, etc.
WEATHER PROOF ALWAYS LEGIBLE
COST LITTLE MORE THAN ½c EA.
Just write into the metal
WITH ORDINARY PENCIL OR BALL POINT PEN
Write for Free Samples and Prices
PERMATAG—91 N. Daisy Ave., Pasadena, Calif.


You don't pay the man who isn't there
Engineered to Cut Costs
CORLEY
SAWMILL MACHINERY
CORLEY MANUFACTURING CO., CHATTANOOGA, TENN.

Plant Address: International Falls, Minn., Kenora and Fort Frances, Ont.
Personnel: Robert Faegre, pres.; George Gibb, gen. mill mgr.; Paul A. Mahony, sls. mgr.; A. S. Bull, tech. dir.
Raw Materials Used: Wood fibers.
Trade Name: Insulite.
Uses: Structural and interior finish.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile, siding.

NATIONAL GYPSUM COMPANY
Home Address: Buffalo, New York.
Plant Address: Mobile, Ala.
Personnel: F. A. Menske, pres.; George Cook, mgr.; George Lewis and W. H. Bechtel, supts.; M. F. Cerruti, vice-pres.-sales; D. D. Crandell, vice-pres. in charge of research.
Production (Rated Annual Capacity): 240,000,000 sq. ft.
Rated Daily Capacity: 375 tons.
Process: Plant No. 1 groundwood system; Plant No. 2 semi-chemical system.
Panel Sizes: 4x10 feet.
Percent Into Cut-Up Sizes: 100%.
Thicknesses: ⅜, ½, ⅝, ¾, 25/32, 1 inches.
Raw Materials Used: Pine and hardwood.
Volume (from logs): 33,000 tons annually.
Colors: Natural, white, decorated.
Trade Name: Gold Bond.
Uses: Insulation and acoustical.
Characteristics: Highly rated for insulating and acoustical values.
Percent of Product for Own Use: None.

SIMPSON TIMBER COMPANY
Home Address: 2000 Washington Bldg., Seattle, Wash.
Plant Address: Shelton, Wash.
Personnel: T. Gleed, pres.; W. B. Johnson, mgr.; W. W. McCann, supt.; J. Wetherby, sls. mgr.; Everett Reichman, tech. dir.; R. S. Hoit, plant engr.
Production: (Rated Annual Capacity): 95,000,000 sq. ft. ½" basis.
1960 Production: 76,205,000 sq. ft.
Rated Daily Capacity: 110 tons.
Process: Disc refiner Mechanical fibre.
Panel Sizes: 8x20 ft.
Percent Into Cut-Up Sizes: 100%
Thicknesses: 5/16, ⅜, ½, ¾, 25/32, 1 inches.
Raw Material Used: Fir & hemlock.
Volume (mill residues): 110 tons annually.
Spec. Gravity: .26.
Colors: Natural, white and asphalt.
Trade Names: Forestone Fissured Tile, EasyWall partition units and panels.
Uses: Interior finish, structural sheathing, roof insulation, misc. uses.
Percent of Product for Own Use: None.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile, V-groove, movable interior prefinished partitions, prefinished wall panels.

SOUTHERN PINE LUMBER CO.
Fiber Products Div.
Home Address: Diboll, Texas.
Plant Address: Diboll, Texas.
Personnel: Arthur Temple, Jr., pres.; Carrol Allen, mgr. & sls. mgr.; C. H. Shepherd, Jr., supt.; F. S. McGee, tech. dir.
Production: (Rated Annual Capacity): 100,000,000 sq. ft. ½" basis.
1960 Production: 78,000,000 sq. ft.
Rated Daily Capacity: 150 tons.
Process: Templebord.
Panel Sizes: 12x24 feet.
Percent Into Cut-Up Sizes: 100%.
Thicknesses: ½ to 3 inches.
Raw Material Used: Woodfiber.
Volume (mill residues): 70,000 tons annually.
Trade Names: Wood-Bord, Certainteed.
Uses: Home & commercial construction.
Characteristics: Woodfiber.
Percent of Product for Own Use: 10%.
Specialty Items: Pre-coating, T&G, interior finish, structural, roof insulation, decorative, ceiling tile.
Sales Agents: Certainteed Products Corp.

U.S. GYPSUM CO.
Home Address: 300 W. Adams St., Chicago, Ill.
Plant Address: Pilot Rock, Ore.
Personnel: G. J. Morgan, pres.; A. L. Rabb, mgr.; C. L. Walton, prod. mgr.; R. D. Stephan, vice-pres. sls.
Production (Rated Annual Capacity): See Hardboard listing for more details.

WOOD CONVERSION CO.
Home Address: First National Bank Bldg., St. Paul, Minn.
Plant Address: Cloquet, Minn.
Personnel: E. W. Davis, chmn. of Bd.; D. M. Pattie, pres.; M. S. Wolf, vice-pres. sales; H. E. Walter, dir. of mfg. (Cloquet, Minn.); P. S. McGervey, dir. of research & dev.; B. S. Gaffney, dir. of engr.
Raw Material Used: Wood.
Trade Names: Nu-Wood, Balsam-Wool, Tufflex.
Specialty Items: Insulation board, flexible insulation, cushion & protective padding.

TRIAL SAMPLES
Of World-Famous WHITMORE'S Lubricants

OPEN CHAIN LUBRICANT INCREASES CHAIN LIFE UP TO 300%

Penetrates, lubricates, prevents rust. Lubricates deep into chain linkage to reduce friction on pins, rollers, bushings, pressure surfaces. Corrosion inhibitor prevents rust in vital working mechanisms. Lubricates close-tolerance internal surfaces to increase chain life up to 300%. Highly recommended for all climatic conditions to stop rust and corrosion even in salt atmospheres.

Packaged in handy 16 oz. aerosol spray-on containers or in bulk—send for a free trial sample.

ANTI-FRICTION COMPOSITIONS HAVE NO MELTING OR DROPPING POINT

Packaged in 14½ oz. cartridges for handy application with lever-type cartridge guns for constant protection to roller, ball, sleeve bearings and sliding surfaces in "hot" bearing applications or in areas with high ambient heat. Exclusive formulas have no melting or dropping point; moisture resistant; will not wash out; exceptional metal adherence properties; temperature reducing qualities; high extreme pressure values. Available in two grades. Whitmore's Anti-Friction Composition No. 1 (light density), recommended for high speed, high temperature applications. Anti-Friction Composition No. 2 (heavy density), for low-speed high-temperature applications or loosely-fitted bearings. Specify No. when requesting free trial sample.

68 YEARS OF LEADERSHIP LUBRICATING THE FOLLOWING:
- Open Gears, Dipper Sticks, Cams
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- Speed Reducers
- Enclosed Gear Cases
- Roller, Ball and Sleeve Bearings
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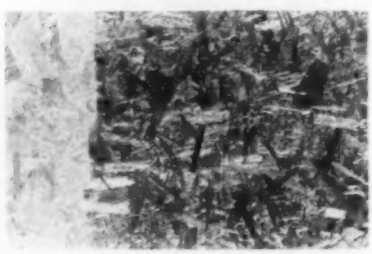


Product Provides Particleboard Finish

Specifications: Deft finish gives particleboard depth and richness when the clear, semi-gloss product is applied. Both seals and finishes.

Manufacturer: Desmond Brothers.

Plywood Moves Ahead

Television to headline sales push

Signing up to officially become sponsor of "David Brinkley's Journal," is DFPA executive vice-pres., (seated center) W. E. Difford. Receiving contract, left, is Walter Tolleson, San Francisco NBC sales manager. John Ritchie, DFPA adv. mgr. (seated right) and Harold Dixon (right), partner in Cole & Weber Advertising Agency, all played a part in arranging for the new DFPA TV show.

Douglas Fir Plywood Association will launch a national network television campaign this fall in an aggressive effort to win broader public acceptance in today's building markets.

Decision to move into television came at the industry's general meeting of DFPA, where 87% of the membership approved a special dues increase that will produce an estimated $3.6 million over a two year period. This will be over-and-above the association's basic program which includes about $5 million for quality control, research and trade promotion.

DFPA executive vice-president W. E. Difford believes that this is "the most important decision the industry has made since it inaugurated a national promotion program back in 1938. It shows the tremendous vitality of the industry."

A new program: In announcing the program, Difford said DFPA will sponsor NBC's forthcoming information program, "David Brinkley's Journal." This will be a weekly half hour "by-line" program in which Brinkley, of the famed Huntley-Brinkley team, will turn his powers of attention and observations to aspects of the current scene in TV's first prime-time "news feature column."

The idea for expanding the plywood promotion to TV originated with a group of Southern Oregon producers sparked by Robert Davis, general manager of Southern Oregon Plywoods and it gathered "steam" during the market slump last fall.

Analyzing the industry's position before the decision, DFPA advertising director, John Ritchie, said television provides by far the best vehicle for strategic selling job the industry must do to hold and enlarge present markets and find new ones.

Majority of commercials will be oriented to sales needs of lumber dealers, builder-dealers and home builders. Some will emphasize how structural plywood in subfloors, wall sheathing and roof decking provides better consumer values in homes. Others will demonstrate remodeling possibilities with plywood, with some attention to the interests of the home handyman, backing up dealers in emphasizing this market. Other commercials will sell new products, boats, farm uses and information of consumer interest about plywood.

Up to now, DFBA's promotion campaigns have been aimed at selected markets—or tactical campaigns, said John Ritchie. Through TV the industry will have a "cannon" to reach an estimated 12 million audience.

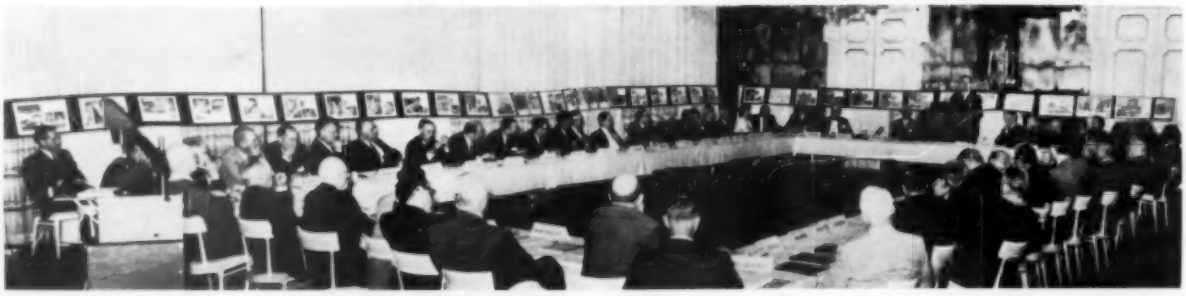
Sales problems: Overproduction has been haunting the industry for nearly two years. Although plywood use climbed at a record pace, industry capacity has grown faster. At the same time, competition from other newer materials has become stiffer. Plastics, aluminum, steel and other materials have been edging into markets that had been traditionally plywood. Complicating these problems has been the more aggressive advertising and promotion campaigns from the fewer but larger industries, while plywood is made up of many relatively small companies, making it more difficult to muster the necessary promotion dollars.

The plywood manufacturers' decision to go to TV marks the first time any element of the forest products industry has been able to muster the resources to utilize the broad selling power of TV on behalf of wood building products.

The move is particularly significant in view of the past year's slipping markets and prices. It is historical, since this does mark the first time such an aggressive step forward has been taken at a like time. It demonstrates, with real evidence, that the long awaited for turn of industry thinking toward market or "consumer orientation" has arrived.

This is good—and it is healthy for plywood producers. Their action is likely to catch fire and spark a real movement toward more aggressive "sales mindedness" on the part of the entire wood products industry. Our congratulations to DFPA and plywood manufacturers on their foresight.

It is the beginning of a revitalized, "fresh" spirit that will lead toward more research, product development, promotion and sales.



Board of Directors of NLMA spring meeting at New Orleans hear about prefinishing and increased funds needed.

Seek Finish to Last 10 Years at NLMA workshop

At the spring meeting of National Lumber Manufacturers Association in New Orleans, La., a joint paint-lumber industry workshop brought together representatives of paint, varnish, lacquer, chemical, plastic and lumber manufacturers to study the problems of factory precoating and pre-finishing of wood.

As the result of the findings of the workshop, the NLMA board of directors approved a recommendation to establish a joint Paint-Lumber Steering Committee with membership of lumber and paint industries.

The joint committee will define objectives for future cooperation and study the initiation of a joint research effort directed toward improving the position of wood and wood finishes in the building industry.

Setting the keynote for discussions, George H. Weyerhaeuser, vice-president of Weyerhaeuser Company, Tacoma, Wash., said simply that "we need a trouble-free, 10-year, exterior coating for wood siding and to meet the demands of the public, a satisfactory clear, natural finish to bring out wood's inherent beauty." In meeting the competitive materials of today, Weyerhaeuser pointed out, "we are faced with the problem of frequent refinishing of the exterior surface—a maintenance cost that is a recurring problem."

Primary target of the joint research program established at New Orleans meeting, is the development of better mill-applied finishes and methods of application. Clear and natural finishes are high on the list.

In addition to the prefinishing problem the conference also tackled the subject of the proper use of paints and finishes now available. An educational program that will include the publication of an up-to-date manual on the painting of wood is a project that is marked for early completion.

This action by the lumbermen is the first big-step toward meeting one of the real problems necessary to hold and recapture a large part of the wood-siding market lost to other competitive materials.

Two Million for Promotion: National Wood Promotion Committee chairman Eliot Jenkins announced that actions by federated members assured the 2-year-old wood promotion program would be stepped up June 1 from a 10c per thousand board foot production rate to 16c rate. The new program calls for a projected annual budget of $2,053,000 in 1962.

The committee also recommended that consideration be given to making the support of the NWPP a part of the NLMA dues structure.

Transportation: The NLMA board authorized the NLMA staff to cooperate with federated associations in preparing a study of transportation and related problems of American lumber exporters and intercoastal shippers.

Simplified Grades: The board directed a special subcommittee to develop a recommendation for a simplified system of grade names and basic grade descriptions for softwood lumber to be applied to lumber for residential, light framing and general construction—to reconvene within 60 days and remain in session until unanimous recommendations had been reached.

Specific projects: Board adopted policy on technical investigations which advocates such programs sponsored by NLMA will be directed to specific projects which are of greatest importance to the entire lumber industry. In general, such projects should serve to develop supporting data for promotion and sale of lumber and wood products; leaving basic research to public bodies and product development to individual companies.

Grade Survey: NWPC ordered immediate survey to determine the most frequently used grades, sizes, species and lengths of lumber for joints and rafters in light frame construction in order to assist in preparation of simplified span tables for joists and rafters. Also endorsed recommendations of The Economic Council of Lumber Industry relative to development of new wood construction systems and ordered preparation of a practical program to put this development into effect.

National Wood Council met in conjunction with NLMA session at New Orleans. Chairmanned by Ward Mayer, Timber Structures, Inc., Council works on wood products market developments.

New Officers: From left: Vice-chrm. Howard Curtis, Simpson Tbr. Co., Shelton, Wash.; statistician Eckard Toy, Diamond Lbr., Co., Tillamook, Ore.; Chairman E. A. Roles, Weyerhaeuser Co., Longview, Wash.; secr. T. K. Lawson, Crown Zellerbach Canada Ltd., Vancouver, B. C.; retiring chrm. W. B. Webster, Tahsis Co., Ltd., Vancouver; treas. Kenneth Gipson, Georgia-Pacific, Portland.

Getting More Safety

Keynoting the 27th annual Forest Products Safety Conference, recently held in Vancouver, B. C., George H. Gallaway, president, Crown Zellerbach Corp., Canada, Ltd., stated that "management is maturing in its approach to the safety problems of its people. The final goal of any industrial safety program is the complete elimination of accidents. This can't be accomplished simply by setting statistical goals.

He listed these four principles to help achieve greater safety results:

1. Making injury prevention a basic responsibility of every level of management.
2. Making the focal point of injury prevention the relationship of the first line supervisor with his crew.
3. Making quality of the injury prevention program more important than quantity.
4. The safety man must be looked upon as an assistant and counselor to all levels of management and he has no line authority. He should provide specialized advice, training and skills to aid line management.

The program sessions of the meeting were guided by conference chairman W. B. Webster, Tahsis Co., Ltd., Vancouver, B. C.

Responsibility is the inside feeling of obligation to attain a certain goal, said Mr. R. S. Boaz, Personnel Development Service, Renton, Wash. Accidents, he said, will be prevented only when an organization sets policies and goals acceptable by all which may be achieved.

Principal problem said Mr. Boaz is failure of immediate supervisor to accept responsibility and accountability for accident prevention. The staff man can assist line management in identifying realistic goals and can give assistance in planning. However, he accused staff people of spending too much time consulting with other staff people. Instead, "they should be trying to find out what the line boys want. You can't delegate responsibility. You can delegate authority."

Workshop on foreman activities changes required reported the following back to the conference:

1. Accept the idea that production and safety are synonomous.
2. Budget more personal time for safety effort.
3. Utilize staff services better.
4. Stimulate people by asking leading questions rather than spending so much time guarding equipment.
5. Foreman should be safety man to his employees.
6. Have "tailgate" talks.

"If you want real accident prevention, involve the top, middle and bottom in the problem of *what* should be done and by *whom* and with *what* authority," summarized Mr. Boaz.

(Continued on page 98)

Safety Award Winners

Sawmill Operations — Over 750,000 Man Hours	
Plaque — Rayonier Corp. — Marpole Division	3.99
Certificate — Edward Hines Lbr. Co., Hines, Ore.	5.85
Sawmill Operations — 250,000/750,000 Man Hours	
Plaque — Pope & Talbot Inc., Port Gamble, Wash.	3.98
Certificate — L & K Lumber (North Shore) Limited	5.58
Sawmill Operations — Under 250,000 Man Hours	
Plaque (108,658) — Ralph L. Smith Lbr. Co., Anderson, Calif.—Mt. Shasta Division	0.0
Certificate — Ralph L. Smith, Anderson, California Castle Creek Division	4.28
Plywood Operations — Over 250,000 Man Hours	
Plaque — B. C. Forest Products, Victoria, B. C.	1.09
Certificate — Weyerhaeuser Co., Longview, Wash.	4.83
Plywood Operations — Under 250,000 Man Hours	
Plaque — Simpson Timber Co., Capital Plywood, Shelton, Wash.	0.0
Certificate — Hult Lumber Co., Junction City, Ore.	11.65
Shingle Mills	
Plaque — Canadian Forest Products — Huntington Merritt Division, B. C.	25.53
Certificate — Canadian Forest Products — Huntington Merritt Division, B. C.	24.41
Hardboard Plants	
Plaque — Simpson Timber Co., Shelton, Wash.	0.0
Certificate—Simpson Timber Co., Shelton, Wash.	4.44
Wood Preserving Plants	
Plaque—Pope & Talbot, Inc., St. Helena, Ore.	21.57
Certificate — International Paper Co., Long Bell Div., Longview, Wash.	21.29
Factory (Wood Products)	
Plaque — Ralph L. Smith Lumber Co.	0.0
Certificate — Simpson Timber Co., McCleary—Doors	2.80
Green Veneer	
Certificate — Pope & Talbot, Inc., Port Gamble, Wash.	0.0
Improvement Award	Reduction
Plaque — International Paper Co., Weed, Calif.	88.89
Special Awards for Zero Frequency	
Sawmill Under 250,000 Hours	
Ralph Smith Lumber Co., Castle Creek Div., Anderson, Calif.	0.0
Plywood Under 250,000 Hours	
Hult Lumber Co., Junction City, Ore.	0.0
Hardboard	
Kaiser Gypsum Co. Inc., St. Helena, Ore.	0.0
Factory Wood Products	
American Forest Products Corp., Lakeview, Ore.	0.0
Ralph L. Smith Lumber Co., Anderson Div., Anderson, Calif.	0.0
U. S. Plywood Corp., California Div.,	
Boise Cascade Lumber Co., Yakima, Wash.	0.0
Anderson, Calif.	0.0

Getting More Safety *(Continued)*

Securing cooperation: A panel moderated by George W. Norris, Association Safety Dept., Vancouver, B. C. agreed on the following points:

1. Inspire rather than dominate.
2. Persuade instead of compulse.
3. Don't be dictatorial.
4. Make personal contacts in a friendly atmosphere.
5. Make everyone a part of the committee.
6. Have top management revise its attitude.
7. Establish objectives for production.
8. Define safety responsibility.
9. Establish a follow-up system.
10. Back up words with action.
11. Make good housekeeping a duty.
12. Define safety rules and enforce them, indoctrinate new employees carefully.
13. Watch unsafe conditions and correct them.
14. Follow up on safety suggestions. Do something about them right now.
15. Provide prompt first aid treatment for the slightest injury.
16. Reducing accidents is one of the best ways to stay in business.

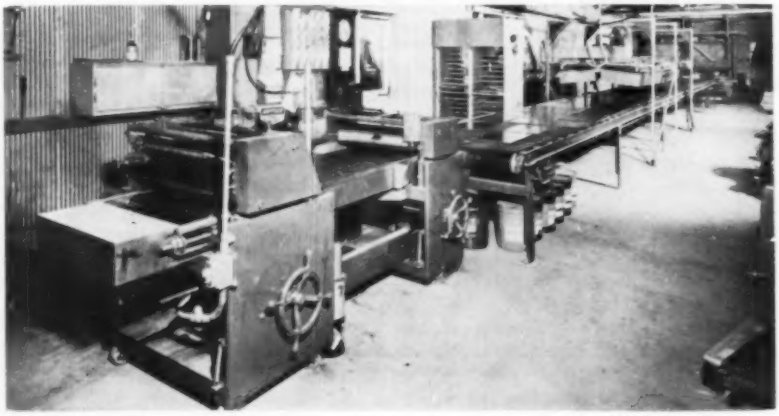
You can prove it to the boss with figures. Develop a set of economics on costs of accidents.

Make your safety teams more than just inspectors. They should be helpful safety analysts. Make your supervisors feel important — and keep them informed. Have a good attitude toward people and respect them.

Combination coater and double roller coater for doors has the doors pass through the coater and roller coater from where they are carried on the drying conveyor for a three-minute flash-off period, then through an infrared oven for two minutes, followed by three minutes of cooling. They are then ready for sealer sanding. Stain and two coats of sealer are applied in the one operation.

Manufacturer: Dubois Machine Co., Inc.

For more data, circle 416 on page 80



BUYERS GUIDE

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1 to 44 INCHES PER YEAR.....$15.00 per column inch
45 to 89 INCHES PER YEAR.....$13.75 per column inch
90 to 179 INCHES PER YEAR.....$12.50 per column inch
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360 OR MORE INCHES PER YEAR.....$11.00 per column inch

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(Not commissionable)

All cards set in uniform style—⅛" deep by ¼" wide. $12.00 per column inch. Special rate: $125 for 13 one-inch card insertions if paid in advance, to run within 52-week period, without copy change.

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30c per word, $7.00 minimum; $2.00 additional for box
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STEEL PLATE AND BEAMS

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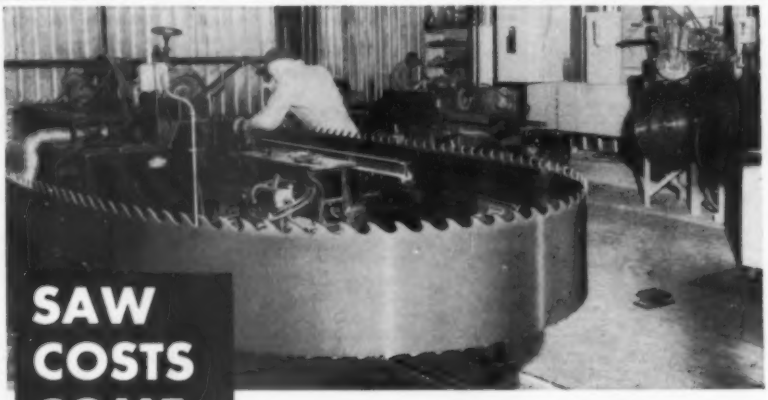

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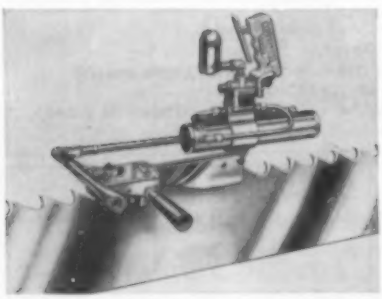

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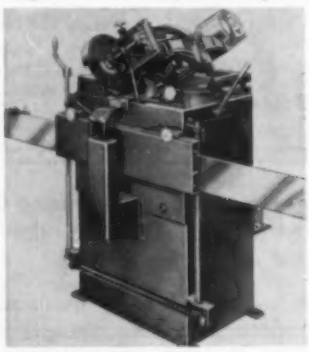

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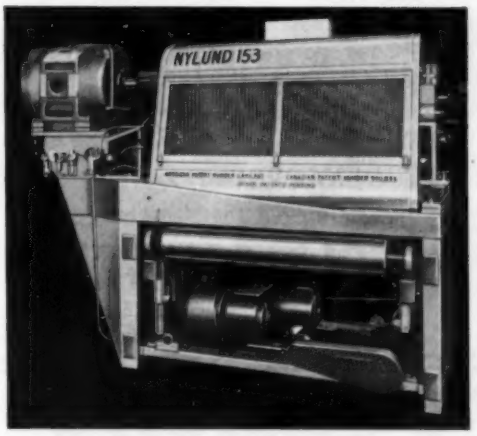

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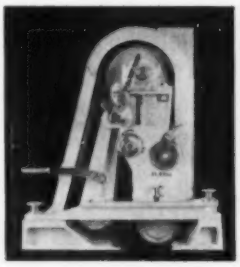

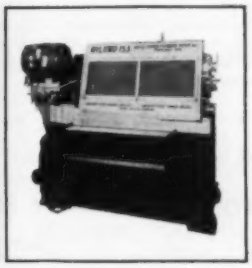

At extreme left, control side of NYLUND Conversion Unit showing drive roll, tracking roll, cutting roll, and patented smoothing bar.

Left, NYLUND Conversion Unit mounted on Endless-Bed Drum Sander.

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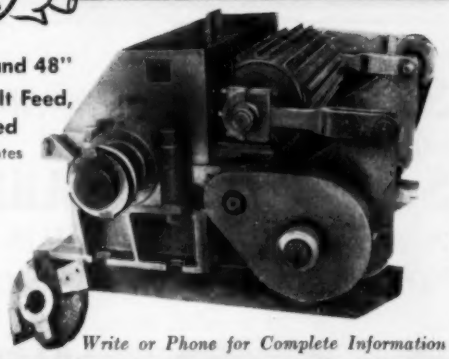
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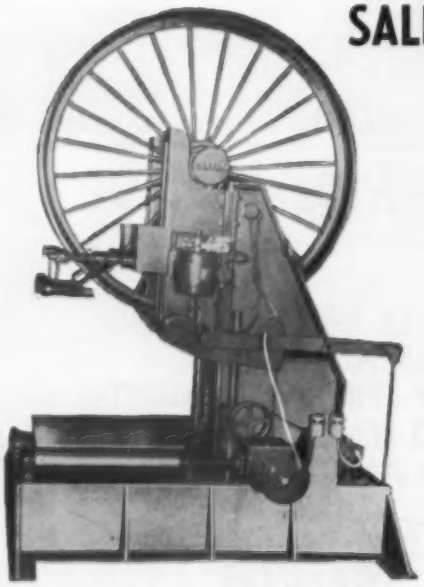

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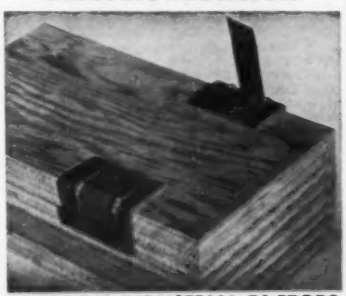
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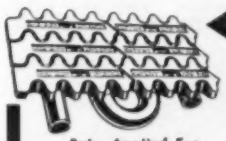
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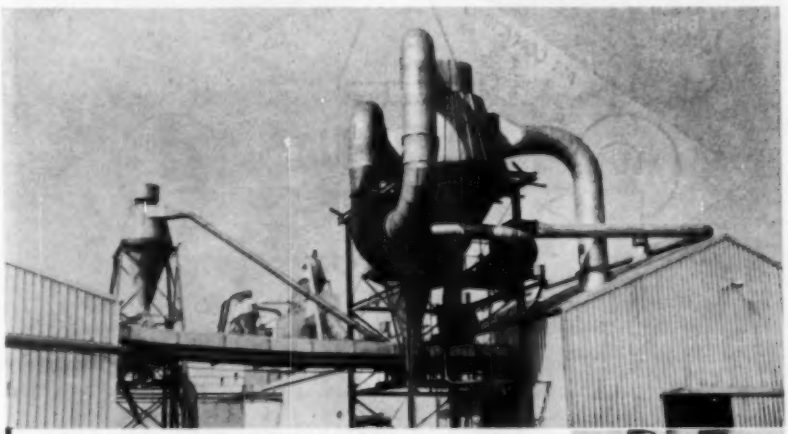

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Filer & Stowell Co., Milwaukee, Wis.
Goldstein & Bloch, Aberdeen, Wash.
Irvington Machine Works, Portland
Jeddeloh Bros., Gold Hill, Ore.
Keystone Machine Works, Roseburg, Ore.
Klamath Iron Works, Klamath Falls, Ore.
Klamath Mach. & Locom. Wks., Ukiah, Cal.
Kohler-Joa Corporation, Sheboygan Falls, Wis.; Chehalis, Wash.
L-M Equipment Co., Portland, Ore.
Loysted & Co., Inc., C. M., Seattle, Wash.
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McDonough Mfg. Co., Eau Claire, Wis.
Mereen-Johnson Machine Co., Minneapolis
Mill Equipment, Inc., Seattle
Monarch Forge & Machine Works, Portland
National Machinery Sales, Gold Hill, Ore.
Newman Machine Co., Greensboro, N. C.
Northeast Ohio Machine Bldrs., Columbiana, Ohio
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Portland Machinery Company, Portland
Prescott Iron Works, Inc., Portland
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Salem Equipment & Supply Co., Salem, Ore.
Schurman Mach. Works, Inc., Woodland, Wn.
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Stetson-Ross Machine Co., Seattle, Wash.
Sumner Iron Works, Everett, Wash.
Tyee Machinery Co., Seattle, Wash.
Ward Construction Co., M. A., Eugene, Ore.
Western Machinery Corp., Portland
Wheland Company, Chattanooga, Tenn.
Yates-American Machine Co., Beloit, Wisc.; High Point, N. C.; Memphis; Portland.
Zidell Machinery & Supply Co., Portland

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Sel-Set Machinery Corp., Salem, Ore.
Ward Const. Co., Inc., M. A., Eugene, Ore.

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SPLITTERS, log
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Goodyear Tire & Rubber Co., Akron, Ohio; Portland; Seattle
U. S. Rubber Company, New York City; Portland; Seattle.

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Western Gear Works, Seattle

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Allis-Chalmers, Milwaukee, Wis.
Caterpillar Tractor Co., Peoria, Ill.
Deere Industrial Div., John, Moline, Ill.

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Euclid Div. of General Motors, Cleveland, O.
International Harvester Co., Chicago, Ill.
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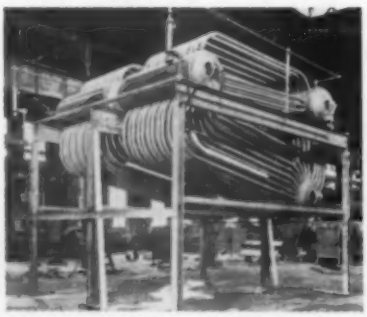

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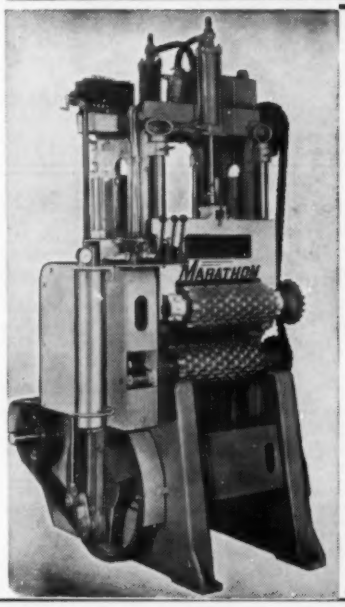

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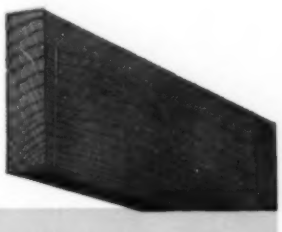

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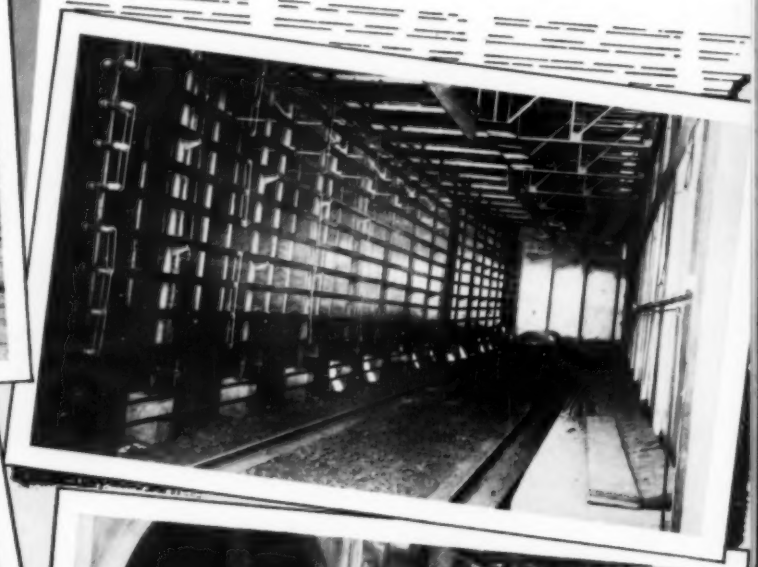

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